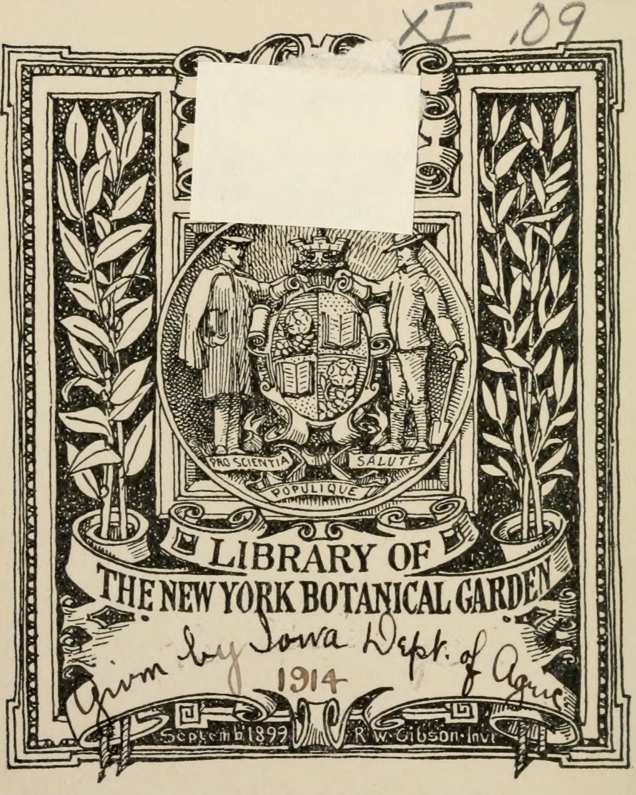
SHOUT
SHARE
IT


PRO SCIENTIA
SALUTE
POPULIQUE

XI .09

LIBRARY OF
THE NEW YORK BOTANICAL GARDEN

Given by Iowa Dept. of Agric.
1914

Septemb 1899 R.W. Gibson Invt

THIRTEENTH ANNUAL

Iowa Year Book of Agriculture

Issued by the

Iowa Department of Agriculture

1912

LIBRARY
NEW YORK
BOTANICAL
GARDEN.

DES MOINES
ROBERT HENDERSON, STATE PRINTER
JOHN M. JAMIESON, STATE BINDER

XI
.09
1912

LETTER OF TRANSMITTAL

Office of Iowa State Department of Agriculture.
Des Moines, Iowa, July 1, 1913.

To His Excellency, George W. Clarke, Governor of Iowa:

Sir:—I have the honor to transmit herewith the Thirteenth Annual Iowa Year Book of Agriculture for the year 1912.

Arthur R. Corey,
Secretary State Board of Agriculture.

INTRODUCTORY

The 1912 Iowa Year Book of Agriculture, presented herewith, is made up of fifteen parts.

Part I is a reprint of the annual report of the Iowa Weather and Crop Service for the year 1912. It contains a summary and monthly review of the climatology for the year; a review of crop conditions by months; dates of last killing frost in spring, and first in autumn; climate and crop review during crop season; summary of weekly climate and crop bulletins issued; summary of crop reports June 1, July 1, September 1 and December 1; a tabulated crop summary showing production and value of soil products and a table giving average yield per acre and total products by counties.

LIB
NEW
BOTA
GAR

Part II presents statistical tables of Iowa's principal farm crops for the years 1880-1885-1890 and 1896 to 1912 inclusive, showing average yield per acre; total yield, average farm value December 1, total acreage, and total value; acreage, production and value of the principal farm crops of the United States in 1909-1910-1911 and 1912 by states; estimated number and average price and total value of farm animals in the United States January 1, 1913, with comparisons; statistics of the principal farm crops of the world for the years 1908 to 1912 inclusive.

Part III is a tabulation of crop statistics collected by the township assessors and reported to this department by the county auditors. The data is presented in five tables as follows:

Table No. 1—Total number, average size and total acreage of farms, total acreage occupied by farm buildings, public highways and feed lots, acreage in pasture, garden, orchard, acreage in crops not otherwise enumerated and acreage of land not utilized for any purpose. Total number bushels apples harvested, number silos on farms and average monthly wage paid farm help during summer and winter months, by counties for the year 1912.

Table No. 2—Gives acreage, yield per acre and total yield of corn, oats, winter wheat, spring wheat and barley, by counties for the year 1912.

Table No. 3—Gives acreage, yield per acre and total yield of rye, tame hay, wild hay, alfalfa, potatoes and flax seed, by counties, for the year 1912.

JAN 20 1914

Table No. 4—Gives number of horses all ages, mules all ages, January 1, 1913, number of swine on farms July 1, 1912. Number of dairy cows kept for milk, number other cattle not kept for milk, and total number of cattle all ages January 1, 1913. Number of sheep kept on farms, number shipped in for feeding and number sold for slaughter. Number pounds of wool clipped, total number all varieties poultry on farms July 1, 1912, and estimated number dozen eggs gathered for the year 1912.

Table No. 5—Acreage in sweet corn, tons gathered for canning; total acreage pop corn, and yield in bushels and total acreage and yield in bushels for clover and timothy seed, by counties for the year 1912.

Part IV. Proceedings of the ninth annual meeting of the Corn Belt Meat Producers' Association.

Part V. Proceedings of the annual meeting of the State Farmers' Institute.

Part VI. Synopsis of the proceedings of the State Board of Agriculture and committee meetings of 1911 and 1912.

Part VII. Proceedings of the State Agricultural Convention, including President's address and reports of the secretary and treasurer, financial statement of farmers' institutes, financial statement and statistics of county and district fairs and a complete report of the Iowa State Fair and Exposition for 1912 with detailed statement of receipts and disbursements of the Department of Agriculture for the fiscal year ending November 30, 1912.

Part VIII. Proceedings of the annual meeting of the Iowa Swine Breeders' Association held at Ames, June 11, 1912.

Part IX. Proceedings of the 35th annual convention of the Iowa State Dairy Association held at Waterloo, October 14-19, 1912.

Part X. Contains extracts from the State Dairy Commissioner's report for 1912.

Part XI. Extracts from the State Veterinary Surgeon's report for the period ending June 30, 1912.

Part XII. Contains papers on live stock, agricultural and miscellaneous topics and papers read before county institutes.

Part XIII. Press reports of the Iowa State Fair and Exposition for 1912; official report of awards in the live stock departments and the standing and scores made in the boys' judging contest.

Part XIV. Condensed report of agricultural conditions in Iowa counties by county and district agricultural societies and special reporters for the year 1912.

Part XV. Directory of associations and organizations representing agricultural interests in Iowa.

Note: A complete report of the Stallion Registration Division, including directory giving name and address of owner, name and breed of stallion, and number of state certificate issued, and other information relative to the division is published in pamphlet form.

STATE BOARD OF AGRICULTURE
1913

EX-OFFICIO MEMBERS.

Governor of State	Des Moines
President of Iowa State College	Ames
State Dairy Commissioner	Des Moines
State Veterinarian	Des Moines

OFFICERS.

C. E. Cameron, *President*	Alta
O. A. Olson, *Vice President*	Forest City
A. R. Corey, *Secretary*	Des Moines
G. S. Gilbertson, *Treasurer*	Des Moines

DISTRICT MEMBERS.

First District—R. S. Johnston	Columbus Junction
Second District—C. W. Phillips	Maquoketa
Third District—Elmer M. Reeves	Waverly
Fourth District—E. J. Curtin	Decorah
Fifth District—E. M. Wentworth	State Center
Sixth District—T. C. Legoe	What Cheer
Seventh District—Chas. F. Curtiss	Ames
Eighth District—Frank E. Sheldon	Mount Ayr
Ninth District—John F. Summers	Malvern
Tenth District—John P. Mullen	Fonda
Eleventh District—H. L. Pike	Whiting

The President, Vice President, Secretary and Treasurer are elected for one year.

Terms of Directors from odd-numbered Districts expire second Wednesday in December, 1913. Terms of Directors from even-numbered Districts expire second Wednesday in December, 1914.

COMMITTEES

YEAR 1913

EXECUTIVE.

C. E. CAMERON..A. R. COREY
O. A. OLSON.

AUDITING.

C. W. PHILLIPS......................................R. S. JOHNSTON
T. C. LEGOE.

RESOLUTIONS.

E. M. WENTWORTH.................................F. E. SHELDON
E. J. CURTIN.

POWERS AND DUTIES OF BOARD.

C. E. CAMERON..A. R. COREY
O. A. OLSON.
E. M. REEVES. C. F. CURTISS

ADULTERATION OF FOODS, SEEDS AND OTHER PRODUCTS.

R. A. PEARSON.....................................W. B. BARNEY
E. M. WENTWORTH

NOXIOUS WEEDS, FUNGUS DISEASES IN GRAINS, GRASSES, PLANTS, ETC.

E. M. REEVES...................................JOHN P. MULLEN
J. F. SUMMERS

DAIRYING AND DAIRY PRODUCTS.

W. B. BARNEY.......................................J. F. SUMMERS
C. F. CURTISS

ANIMAL INDUSTRY.

C. F. CURTISS...J. I. GIBSON
H. L. PIKE

LEGISLATIVE.

C. E. CAMERON..A. R. COREY
O. A. OLSON
J. P. MULLEN E. J. CURTIN

REVISION OF PREMIUM LIST, RULES AND REGULATIONS.

C. E. CAMERON..A. R. COREY
O. A. OLSON
R. S. JOHNSTON C. F. CURTISS
H. L. PIKE

ILLUSTRATIONS

Administration Building 214
Alfalfa 652, 654, 656, 657, 658, 660, 661, 662, 664, 666, 668, 670, 671, 673, 674, 676, 678, 679, 682, 685, 686, 687, 688, 690, 691, 692, 694, 695, 696, 698, 703, 705, 706
Angus cow 823
Angus bull 747
Animals afflicted with tuberculosis....567, 568, 569, 570, 571, 572, 573, 574
Boys' Camp at the 1912 Iowa State Fair.............................. 444
Brown Swiss cow.. 837
Champion Berkshires 466
Champion Hampshire pen 466
Chester White boar 848
Count Avon 118
Crop maps 104, 105, 106, 107, 108, 109, 110, 111, 112
Duroc sow 845
Farm team 800
Guernsey cow and twin calves...................................... 554
Hereford bull 820
Hereford cow 772
Holstein bull 833
Interior view Agricultural Building at 1912 Iowa State Fair........... 311
Interior Live Stock Pavilion Iowa State Fair....................... 600
Jersey bull 833
Map of Iowa showing location of creameries, cheese factories and condenseries 553
Oxfords, first get of sire.. 756
Polled Durham bull and cow.. 827
Precipitation chart 24
Percheron mare 790
Red Polled bull 724
Sanitary and insanitary milk...................................... 540
Shire yearling 795
Short-horn bull 721
Short-horn heifer 815
Shropshire ewe 859
Silos in Iowa, map indicating location............................. 630
View of one portion Iowa State Fair Grounds........................ 302

TABLE OF CONTENTS

Letter of Transmittal.
Introductory.
State Board of Agriculture.
Standing Committees.
Index to Illustrations.

PART I.

Report of Iowa Weather and Crop Service, 1912.................... 1- 48

PART II.

Statistical tables of Iowa's principal farm crops for the last thirty-three years; farm crops and live stock statistics of the United States, by states, for 1912; total farm crops of the world for the years 1908 to 1912 inclusive 49- 92

PART III.

Crop and other farm statistics for the year 1912 gathered by township assessors and reported to the department by county auditors; also crop maps showing the distribution, total and average yield of the principal crops for each county.................. 93-118

PART IV.

Proceedings of the annual meeting of the Corn Belt Meat Producers Association 119-214

PART V.

Proceedings of the annual meeting of the State Farmers Institute, December 10, 1912......................................215-236

PART VI.

Synopsis of Proceedings of the State Board of Agriculture and Committee meetings 1911-1912 237-302

PART VII.

Proceedings of the State Agricultural Convention.................303-466

PART VIII.

Proceedings of the annual meeting of the Iowa Swine Breeders Association, 1912 467-486

PART IX.

Proceedings of the thirty-fifth annual convention of the Iowa State Dairy Association, October 14-19, 1912........................487-530

PART X.

Extracts from the State Dairy Commissioner's Report of 1912......531-554

PART XI.

Extracts from State Veterinary Surgeon's Report, 1912............555-600

PART XII.

Papers on live stock, agriculture and miscellaneous topics—papers read before county farmers institutes..........................601-712

PART XIII.

Iowa State Fair and Exposition, 1912, press reports and live stock awards, results in boys' judging contest.......................713-884

PART XIV.

Condensed reports of agricultural conditions by county and district agricultural societies in Iowa for 1912........................885-962

PART XV.

Directory of associations and organizations representing agricultural interests in the state 963-972

IOWA'S SOURCE OF WEALTH

FOR THE YEAR ENDING DECEMBER 31, 1912.

COMPILED FOR THE IOWA YEAR BOOK OF AGRICULTURE FROM STATISTICS GATHERED UNDER THE IOWA STATISTICAL LAW.

ACREAGE, PRODUCTION, AVERAGE YIELD AND VALUE PER ACRE AND TOTAL VALUE OF IOWA FARM PRODUCTS FOR THE YEAR 1912.

	Acreage	Production	Average per acre	Average farm price Dec. 1, 1912	Value per acre	Total value
Corn	9,420,434	419,097,329 bu.	44.5	$ .36	$ 16.02	$ 150,875,038.44
Oats	4,874,752	207,819,162 bu.	42.6	.27	11.50	56,111,173.74
Winter wheat	497,938	11,460,943 bu.	23	.78	17.94	8,939,535.54
Spring wheat	389,371	5,702,539 bu.	14.6	.76	11.09	4,333,929.64
Barley	389,410	11,100,558 bu.	28.5	.50	14.25	5,550,279.00
Rye	73,315	1,322,382 bu.	18	.61	10.98	806,653.02
Potatoes	120,035	11,277,537 bu.	93.9	.44	41.31	4,962,116.28
Flax seed	24,121	238,442 bu.	9.88	1.31	12.94	312,359.02
Hay (tame)	2,635,744	3,138,940 T.	1.2	9.89	11.86	31,044,116.60
Hay (wild)	754,374	836,735 T.	1.1	7.43	8.17	6,216,941.05
Alfalfa	46,641	105,936 T.	2.3	11.00	25.3	1,165,296.00
Miscellaneous crops	104,708	Estimated	------	------	------	7,500,000.00
Timothy seed	514,212	Estimated	------	------	------	2,300,000.00
Clover seed	44,237	Estimated	------	------	------	516,736.00
Pop corn	19,265	Estimated	------	------	------	600,000.00
Sweet corn	34,269	Estimated	------	------	------	1,137,500.00
Garden truck	45,793	Estimated	------	------	------	1,500,000.00
Orchards	134,735	Estimated	------	------	------	5,500,000.00
Pasturage	8,968,644	Estimated	------	------	------	85,000,000.00
Ensilage	------	------	------	------	------	4,000,000.00
Total value of farm crops	------	------	------	------	------	$ 378,371,674.33
Wool	------	Estimated	------	------	------	1,500,000.00
Dairy products	------	Estimated	------	------	------	53,000,000.00
Poultry and eggs	------	Estimated	------	------	------	30,000,000.00
Total val. farm products	------	------	------	------	------	$ 462,871,674.33

NUMBER, AVERAGE VALUE AND TOTAL VALUE OF LIVE STOCK JANUARY 1, 1913.

(Figures taken from United States Year Book of Agriculture, 1912.)

	Number, all ages	Average value	Total value
Horses	1,568,000	$ 120.00	$ 188,160,000
Mules	56,000	124.00	6,944,000
Milch cows	1,337,000	50.30	67,251,000
Other cows	2,607,000	33.00	86,031,000
Swine	8,720,000	12.00	104,640,000
Sheep	1,249,000	5.10	6,370,000
Total	------	------	$ 459,396,000

IOWA FARM STATISTICS

Land area of Iowa	35,575,040
Total acreage in farms	30,914,178
Total number of farms	189,969
Average size of farms, acres	162.8
Total population, 1910	2,224,771
Rural population, 1910	1,544,717
Farms operated by owners and managers, 1910	134,929
Farms operated by tenants, 1910	82,115
Number of silos on farms	6,781
Value of live stock	$459,396,000
Value of farm crops and other products	$462,871,674
Total value of live stock, farm crops and other products	$922,267,674
Average value live stock, farm crops and other products per farm	$ 4,854

PART I.

Report of the Iowa Weather and Crop Service for 1912

George M. Chappel, Director

The meteorological and statistical data contained in this annual report have been compiled from the monthly and weekly bulletins issued by the Iowa Weather and Crop Service, in co-operation with the Weather Bureau of the United States Department of Agriculture. The data have been condensed, and it is believed that the matter will be valuable and convenient for reference and comparison in future years.

Reports have been received regularly each month from 118 co-operative meteorological stations, and from the U. S. Weather Bureau stations at Des Moines, Davenport, Dubuque, Charles City, Keokuk, and Sioux City, Iowa, and Omaha, Neb.

The instrumental equipment has been kept up to a high standard.

This office distributed 28,400 copies of the Monthly Review of the Iowa Weather and Crop Service, and 65,000 copies of the Weekly Weather Crop Bulletins. The daily weather forecasts were distributed daily to 243,000 telephone subscribers. Daily forecasts were also distributed by rural mail to 2,000 addresses and by ordinary mail to 1,850 addresses. Daily forecast messages were sent to 78 towns by telegraph at expense of the U. S. Weather Bureau, and special warnings of the approach of cold waves and heavy storms were also distributed whenever issued. Arrangements were made through the Horticultural Department of the Iowa State College to send frost warnings, during the fruit blooming season, to all orchardists in the state who were prepared to use orchard heaters in case of frost or injurious temperatures.

CLIMATOLOGY OF THE YEAR, 1912.

The climatic records for the year 1912 show some very unusual conditions. January was the coldest month on record in Iowa, and the average temperature for the first three months was the lowest on record since the establishment of the weather service. Those months also gave more snow than any like period. The monthly mean temperature was below the normal from June to October, inclusive, except in July, which gave a slight excess, and the precipitation was deficient from April to August, inclusive. Heavy snow fell over the southern and eastern counties on April 17th; freezing temperatures were general over the larger part of the state on May 14th, and light frost occurred in some of the northern counties on June 7th. Notwithstanding these unusual conditions, and the fact that seed corn was poor, and cut and wire worms were more destructive than usual, it is remarkable that the yield of crops, as a whole, was the largest in the history of the state. The year closed mild and pleasant; from about the middle of October to December 31st there was a great excess of temperature and a deficiency of precipitation. The deficiency of snowfall during this period was especially marked, and the great number of clear, mild days was probably unprecedented.

Barometer (reduced to sea level).—The average pressure of the atmosphere for the year 1912 was 30.03 inches. The highest observed was 30.86 inches. at Sioux City, Woodbury County, on January 12th. The lowest pressure observed was 29.19 inches at the same station on April 13th. The range for the state was 1.67 inches.

Temperature.—The mean temperature for the state was 46.4° or 1.1° below the normal. The highest annual mean was 50.6° at Keokuk, Lee County. The lowest annual mean was 42.3°, at Northwood, Worth County, and at Sibley, Osceola County. The highest temperature reported was 104° at Ottumwa, Wapello County, on September 8th. The lowest temperature reported was —47° at Washta, Cherokee County, on January 12th. The range for the state was 151°.

Precipitation.—The average amount of rain and melted snow for the year, as shown by the complete records of 107 stations was 28.89 inches, or 3.76 inches less than the normal, and 2.48 inches less than the average amount in 1911. The greatest amount recorded at any station was 38.13 inches at Guthrie Center, Guthrie County, and the least amount was 15.25 inches at Inwood, Lyon County. The greatest monthly precipitation was 10.12 inches at Audubon, Audubon County, in September. There was no precipitation at Rock Rapids, Lyon County, in November. The greatest amount in any consecutive 24 hours was 5.50 inches at Olin, Jones County, on August 19th.

The average amount of snowfall was 39.5 inches. The greatest amount recorded at any station was 77.2 inches at Earlham, Madison County, and the least amount was 10.2 inches at Clear Lake, Cerro Gordo County. The greatest monthly snowfall was 52.5 inches at Earlham, Madison County. Measurable precipitation occurred on an average of 84 days. This is 3 less than for 1911.

Wind.—The prevailing direction of the wind was northwest. The highest velocity reported was 52 miles an hour from the northwest at Sioux City, Woodbury County, on January 8th.

Sunshine and Cloudiness.—The average number of clear days was 181; partly cloudy, 96; cloudy, 89; as against 165 clear days, 99 partly cloudy, and 101 cloudy days in 1911. Considerably more than the normal amount of sunshine was experienced.

MONTHLY SUMMARIES

JANUARY.

January, 1912, was probably the coldest month ever experienced in Iowa since its settlement. The monthly means for the larger part of the state were lower than ever before recorded. Not only were the monthly means the lowest on record, but the monthly minimum and maximum temperatures were lower than shown by previous records at most stations, and the duration of the extremely cold period exceeded anything of the kind in the history of the state. The longest record we have for a station still in operation is for Dubuque, and the official in charge, Local Office, U. S. Weather Bureau, at that place, says: "The record for mean temperature dates back 61 years, and is complete, with the exception of 2 or 3 years. The monthly mean temperature for January, 1912, is about 1.5° lower than ever before recorded at this station for any month. There were 16 consecutive days with the lowest temperature below zero. The average temperature for the first 12 days was 7.1° below zero. For the 8 days from the 5th to the 12th, inclusive, the average was 10.4° below zero, and for the first 21 days the average was 2.1° below zero. There were 21 days with the minimum of zero or below, or 2 more than ever before recorded during any one month. There were 6 days with the maximum temperature below zero, or 2 more than ever before recorded in any one year. On the 5th the temperature remained about 18° below zero during the hours of daylight. It was 19° below zero at noon with full sunshine.

A station was maintained at Monticello, Jones County, from 1854 to 1906, inclusive, and the lowest monthly mean temperature at that station during that time was 4.6°, in January, 1862, which is 2.2° higher than the mean for the past month at Olin, which is in the same county and about 18 miles south of Monticello. At Iowa City, we have a record since 1858, and the mean for the past month (4°) is 3° lower than in January, 1883, which is the lowest previous record. At Logan, in Harrison County, the mean for the past month is 6.5°, which is 0.6° lower than ever before recorded, and the records date back to 1867. The lowest monthly mean recorded at Muscatine, between 1839 and 1900, was 6.2° in January, 1857.

The first 21 days of the month were extremely cold, and the daily minimum temperatures were below zero over the larger part of the state on the first 16 days, and the maximum temperatures were also below zero on several of those days. The coldest period was from the 5th to the 13th. The last decade was considerably milder, but the minimum temperatures were below zero on several of those dates over the northern half of the state.

Although it was the coldest month ever recorded in the state there was an entire absence of severe winter storms. Nearly all of the precipitation was in the form of snow; the only rainfall was a light mist over the southern half of the state on the 25th and 28th, and as the temperature was below freezing, the rain froze as it fell, covering everything with a coat of ice. Snow flurries were frequent between the 7th and 18th, but the daily amounts were generally small.

The amount of snowfall was considerably below the normal, and the wind movement was comparatively light. There was, however, so little thawing weather the snow remained dry, and even though the wind movement was light, the snow drifted badly and this, together with the severe cold weather during the first and second decades greatly interfered with railroad traffic. Passenger trains were delayed and freight service was completely demoralized. In the cities and towns numerous water pipes, and in some instances, water mains were frozen, causing much loss and great inconvenience. Sleighing was excellent throughout the month, except in the southern tier of counties, where the snow was nearly gone at the close of the month. The ground being covered with a heavy mantle of snow, fall sown grains were thought to be in good condition, but peach trees are reported to be seriously damaged by the severe cold. All live stock is in good condition, and, fortunately, most farmers secured sufficient corn fodder last fall to feed the stock during the winter, but in some localities the supply of feed is getting short and hay is very high price. The ice harvest is nearly completed and the quality is unusually fine. At the close of the month at Davenport the ice was 14.5 inches thick; at Des Moines, 21.0 inches; at Dubuque and Sioux City, 20 inches; and at Keokuk, 12 inches. Except for the extremely low temperature, the month was unusually pleasant for a winter month.

TEMPERATURE.—The monthly mean temperature for the state, as shown by the records of 114 stations, was 4.2°, which is 15.1° below the normal for Iowa. By sections the mean temperatures were as follows: Northern section, 0.1°, which is 16.1° below the normal; Central section, 4.3°, which is 14.9° below the normal; Southern section, 8.3°, which is 14.1° below the normal. The highest monthly mean was 11.8, at Keokuk, Lee County, and the lowest monthly mean, —3.0, at Elma, Howard County. The highest temperature reported was 49°, at Denison, Crawford County, on the 22d; the lowest temperature reported was —47°, at Washta, Cherokee County, on the 12th. The average monthly maximum was 39°, and the average monthly minimum was —33°. The greatest daily range was 52°, at Chariton, Lucas County. The average of the greatest daily ranges was 38°.

PRECIPITATION.—The average precipitation for the state, as shown by the records of 120 stations, was 0.53 inch, which is 0.52 inch below the normal. By sections the averages were as follows: Northern section, 0.69 inch, which is 0.13 inch below the normal; Central section, 0.66 inch, which is 0.44 inch below the normal; Southern section, 0.25 inch, which is 0.99 inch below the normal. The greatest amount, 1.90 inches, occurred at Rockwell City, Calhoun County, and the least, a trace at Elliott, Montgomery County. The greatest amount in any twenty-four hours, 0.80 inch, occurred at Rock Rapids, Lyon County, on the 28th. Measurable precipitation occurred on an average of 5 days.

Snow.—The average fall was 5.5 inches. The greatest amount was 19.0 at Rockwell City and the least was a trace at Elliott.

Sunshine and Cloudiness.—The average number of clear days was 14; partly cloudy, 7; cloudy, 10. The duration of sunshine was above the normal, the percentage of the possible amount being 66 at Charles City; 45 at Davenport; 63 at Des Moines; 60 at Dubuque; 46 at Keokuk; and 45 at Sioux City.

Wind.—Northwest winds prevailed. The highest velocity reported was 52 miles an hour from the northwest, at Sioux City, Woodbury County, on the 8th.

JANUARY NORMALS FOR IOWA, 1890-1912.

Normal temperature for January, 19.1°.
Warmest January, 1891, with mean temperature of 26°.
Coldest January, 1912, with mean temperature of 4.2°.
Normal precipitation for January, 1.07 inches.
Wettest January, 1890, with total precipitation of 2.03 inches.
Driest January, 1899, with total precipitation of 0.28 inch.
Average depth of snowfall for January, 6.9 inches (1892 to 1912 inclusive).
Greatest snowfall in January, 12.6 inches, in 1898 and 1910.
Average number of days with 0.01 inch or more of precipitation, 5.
Prevailing direction of wind, northwest.
Average number of clear days, 13; partly cloudy, 8; cloudy, 10.

FEBRUARY.

With the exception of the low temperatures during the first 12 days, and the abnormally heavy snow storm over the southern and eastern counties on the night of the 25th and the 26th, February, 1912, was a very pleasant winter month. For the state, as a whole, the temperature was slightly below and the precipitation slightly above the normal, but the excess of precipitation was due to the abnormally heavy snow on the 25th-26th, which was confined to the southern and eastern counties; the northwestern third of the state reporting a decided deficiency of precipitation. Over the southern and especially the extreme southwestern counties, the storm broke all former records as to amount and the short time in which it fell. More than 20 inches fell in Fremont and Page counties and most of it fell in about 12 hours. The high winds that obtained during the storm caused the snow to drift badly, and as a result, traffic on highways and railroads was delayed and many highways were blocked for two or three days.

During the first 12 days of the month, low temperatures prevailed, after which milder weather obtained until the 26th. The maximum temperatures ranged between 40° and 50°, the highest being recorded at most stations on the 23d. The 2d, 3d, 4th and 9th were the coldest days, the minimum temperatures varying from —10° to —20°. The ground was covered with snow during the entire month over the northern, central and northeastern counties, but over the southern and western counties the ground was practically bare between the 19th and 24th, and in the extreme northwestern counties there was little or no snow on the ground after the 20th. Winter grains are thought to be in good condition. Stock has wintered well notwithstanding the severe cold weather, but feed is getting scarce and hay is high in price.

TEMPERATURE.—The monthly mean temperature for the state, as shown by the records of 113 stations, was 18.1°, which is 1.1° below the normal for Iowa. By sections the mean temperatures were as follows: Northern section, 15.9°, which is 0.3° below the normal; Central section, 17.7°, which is 1.9° below the normal; Southern section, 20.6°, which is 1.2° below the normal. The highest monthly mean was 23.4°, at Northboro, Page County, and the lowest monthly mean, 13.4°, at Charles City, Floyd County, and at Forest City, Winnebago County. The highest temperature reported was 57°, at Keokuk, Lee County, on the 23d; the lowest temperature reported was —30°, at Decorah, Winneshiek County, on the 3d. The average monthly maximum was 45°, and the average monthly minimum was —15°. The greatest daily range was 53°, at Sibley, Osceola County. The average of the greatest daily ranges was 36°.

PRECIPITATION.—The average precipitation for the state, as shown by the records of 121 stations, was 1.21 inches, which is 0.15 inch above the normal. By sections the averages were as follows: Northern section, 0.46 inch, which is 0.48 inch below the normal; Central section, 1.21 inches, which is 0.13 inch above the normal; Southern section, 1.95 inches, which is 0.80 inch above the normal. The greatest amount, 3.25 inches, occurred at Lenox, Taylor County, and the least, 0.04 inches, at Inwood, Lyon county. The greatest amount in twenty-four hours, 2.00 inches, occurred at Northboro, Page County, on the 25th-26th. Measurable precipitation occurred on an average of 5 days.

SNOW.—The average fall was 11.2 inches. The greatest amount was 33.5 inches at Clarinda, Page County; the least amount was 0.5 inch at Inwood and Rock Rapids, Lyon County.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 10; partly cloudy, 9; cloudy, 10. The duration of sunshine was slightly below the normal, the percentage of the possible amount being 63 at Charles City; 40 at Davenport; 64 at Des Moines; 44 at Dubuque; 41 at Keokuk; and 51 at Sioux City.

WIND.—Northwest winds prevailed. The highest velocity reported was 41 miles per hour from the north, at Sioux City, Woodbury County, on the 1st.

FEBRUARY NORMALS FOR IOWA—1890-1912.

Normal temperature for February, 20.6°.
Warmest February, 1892, with mean temperature of 28.1°.
Coldest February, 1899, with mean temperature of 12.2°.
Normal February precipitation, 1.11 inches.
Wettest February, 1911, with total precipitation of 2.76 inches.

Driest February, 1904, with total precipitation of 0.41 inch.
Average depth of snowfall, 7.3 inches, (1892 to 1912 inclusive).
Greatest snowfall in February, 15.5 inches in 1905.
Least snowfall in February, 2.6 inches in 1902.
Average number of days with 0.01 inch or more of precipitation, 5.
Prevailing wind direction, northwest.
Average number of clear days, 12; partly cloudy, 8; cloudy, 8.

THE WINTER OF 1911-1912.

The mean temperature for the three winter months is 16.7°, which is 5.9° below the normal for the state. The highest temperature reported was 60°, at Keokuk, Lee County, on December 10th. The lowest temperature reported was —47°, at Washta, Cherokee County, on January 12th. The average monthly precipitation for the state was 1.44 inches, and the average total precipitation was 4.31 inches, or 0.91 inch above the winter normal. The average total snowfall, unmelted, was 29.3 inches, or 12.0 inches more than for the winter of 1910-1911. The average number of days with .01 inch or more of precipitation was 17, or 3 more than for the previous winter. The average number of clear days was 37, partly cloudy, 22; cloudy, 32, as compared with 36 clear, 21 partly cloudy, and 33 cloudy days during the winter of 1910-1911. The winters of 1892-3; 1903-4; and 1904-5 were colder than the past winter. The average temperatures for those winters were 14.9°, 16.1°, and 15.8° respectively, but January, 1912, was much colder than any month on record.

MARCH.

With the exception of March, 1899, the month was the coldest March of which we have a record in this state. The average temperature of the past month for 113 stations is 24.9°, and while the mean of the records of 125 stations for March, 1899, was 23°, the average temperature of the regular weather bureau stations at Charles City, Davenport, Des Moines, Dubuque, Keokuk, Omaha, and Sioux City, where the thermometers and their location have remained practically the same, is 0.4° lower for the past month than it was for March, 1899. The records at Dubuque, which are complete for 60 years, except for 1857, 1872 and 1873, show the month just closed to have been 0.6° colder than any other March in the history of the station. The first half of the month was remarkable for the persistency of low temperatures, the means being from 10° to 25° below the normal almost daily. The latter half of the month was milder, but on only one or two days was the mean temperature above the normal or the minimum temperature above the freezing point. However, a decided change to spring-like conditions set in toward the close of the month, during which time the snow melted rapidly and by the 31st it had practically disappeared, except where it lay in drifts. Some frost remained in the ground at the close of the month, but the amount was inconsiderable. Nearly all of the precipitation was in the form of snow, and while there were four principal storm periods, the storms of the 14th-15th and 20th were the only ones of importance. That of the 20th, when more than a foot of snow fell generally, was one of the heaviest March snow storms on record. It was not, however, as injurious to railroad traffic as the storm on the 14th, when all cuts were drifted full of snow and many trains were delayed from 10 to 24 hours, and on some of the branch lines trains were abandoned for one or two days. Ice in the rivers, in the southern half of the state went out between the 24th and 28th, but in the extreme northern counties the ice was still intact. All rivers and creeks were rising rapidly at the close of the month, and in the southern counties were out of their banks. No field work was practicable, but fall sown grains were showing up in good condition after the disappearance of the heavy snow, which had covered the fields since December 17th.

TEMPERATURE.—The monthly mean temperature for the state, as shown by the records of 113 stations, was 24.9°, which is 9.1° below the normal for Iowa. By sections, the mean temperatures were as follows: Northern section, 23.6°, which is 7.6° below the normal; Central section, 24.5°, which is 9.7° below the normal; Southern section, 26.6°, which is 10.1° below the normal. The highest monthly mean was 29.8°, at Keokuk, Lee County, and the lowest monthly mean, 21.6°, at Estherville, Emmet County. The highest temperature reported was 70°, at Mount Ayr, Ringgold County, on the 30th; the lowest temperature reported was —19°, at Corning, Adams County, on the 9th. The average monthly maximum was 58°, and the average monthly minimum was —5°. The greatest daily range was 50°, at Keosauqua, Van Buren County. The average of the greatest daily ranges was 35°.

PRECIPITATION.—The average precipitation for the state, as shown by the records of 121 stations, was 2.01 inches, which is .09 inch above the normal. By sections the averages were as follows: Northern section, 1.46 inches, which is 0.27 inch below the normal; Central section, 2.30 inches, which is 0.32 inch above the normal; Southern section, 2.26 inches, which is 0.21 inch above the normal. The greatest amount, 5.25 inches, occurred at Earlham, Madison County, and the least, 0.60 inch, at Clear Lake, Cerro Gordo County. The greatest amount in twenty-four hours, 1.59 inches, occurred at Guthrie Center, Guthrie County, on the 20th. Measurable precipitation occurred on an average of 7 days.

SNOW.—The average snowfall was 19.1 inches. By sections the averages were as follows: Northern, 12.8 inches; Central, 22.2 inches; Southern, 22.4 inches. The greatest monthly amount reported was 52.5 inches at Earlham, Madison County.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 15; partly cloudy, 6; cloudy, 10. The duration of sunshine was above the normal, the percentage of the possible amount being 70 at Charles City; 54 at Davenport; 63 at Des Moines; 59 at Dubuque; 53 at Keokuk, and 59 at Sioux City.

WIND.—Northeast winds prevailed. The highest velocity reported was 36 miles per hour from the northwest, at Sioux City, Woodbury County, on the 17th.

MARCH NORMALS FOR IOWA—1890-1912.

Normal temperature for March, 34.2°.
Warmest March, 1910, with mean temperature of 48.9°.
Coldest March, 1899, with mean temperature of 23.0°.
The mean temperature for March, 1912, was 24.9°.
Normal March precipitation, 1.74 inches.
Wettest March, 1901, with total precipitation of 2.64 inches.
Driest March, 1910, with total precipitation of 0.17 inch.
Average depth of snowfall, 5.4 inches (1892 to 1912, inclusive.)
Greatest snowfall in March, 19.1 inches, in 1912.
Least snowfall in March, trace, in 1910.
Average number of days with 0.01 inch or more of precipitation, 6.
Prevailing direction of wind, northwest.
Average number of clear days, 12; partly cloudy, 8; cloudy, 11.

APRIL.

The average temperature and precipitation varied but little from the normal for April; the temperature being only 1.4° above and the precipitation 0.14 inch below the normal. The excess of temperature, however, occurred during the first half of the month, which was moderately warm, except on the first three days when the minimum temperatures were near or below the freezing point; the 3d being the coldest day of the month and the 5th the warmest. Warm periods prevailed on the 4th and 5th and from the 10th to the 12th. The latter half of the month was cool. The precipitation was well distributed throughout the month; the 3d being the only day on which no precipitation was recorded in the state. An unusually heavy snow storm for April prevailed over the southern and eastern counties on the 17th. Thirty-six stations within the area of the storm reported an average of 4.0 inches of snowfall; the greatest amount being 12.0 inches at Wapello.

The prevailing wind velocities were much greater than usual for April, and exceeded those for March. Several destructive wind storms occurred, the most damaging ones reported being in the vicinity of Earlham and Boone, on the 13th.

As a whole the month was quite favorable for farm operations, but owing to the fact that no field work was done during March, spring plowing, seeding and planting were delayed and seeding was not completed until the close of the month, and no corn planting was done. At the end of the month the early sown oats were up, and showed a good stand, grass was improving and some stock was in pasture. Cherries and plum trees were beginning to bloom in the southern counties, but in the remainder of the State the buds were still dormant or just beginning to swell.

Temperature.—The monthly mean temperature for the State, as shown by the records of 114 stations, was 49.9°, which is 1.4° above the normal for Iowa: By sections the mean temperatures were as follows: Northern section, 48.5°, which is 1.7° above the normal; Central section, 50.1°, which is 1.6° above the normal; Southern section, 51.2°, which is

0.9° above the normal. The highest monthly mean was 53.0°, at Keokuk, Lee County, and the lowest monthly mean, 46.4°, at Estherville, Emmet County. The highest temperature reported was 84°, at Inwood, Lyon County, on the 5th; the lowest temperature reported was 20°, at Decorah, Winneshiek County, on the 3d. The average monthly maximum was 75°, and the average monthly minimum was 27°. The greatest daily range was 45°, at Cedar Rapids, Linn County. The average of the greatest daily ranges was 36°.

PRECIPITATION.—The average precipitation for the State, as shown by the records of 122 stations, was 2.66 inches, which is 0.17 inch below the normal. By sections the averages were as follows: Northern section, 2.51 inches, which is 0.04 inch above the normal; Central section, 2.51 inches, which is 0.36 inch below the normal; Southern section, 2.97 inches, which is 0.20 inch below the normal. The greatest amount, 5.66 inches, occurred at Creston, Union County, and the least 0.78 inch, at Waverly, Bremer County. The greatest amount in twenty-four hours, 1.83 inches, occurred at Northwood, Worth County, on the 13th. Measurable precipitation occurred on an average of 8 days.

SNOW.—A measurable amount of unmelted snowfall occurred at 36 stations, the average fall being 4.0 inches. Practically all the snow for the month fell on the 17th. The average for the State was 1.1 inches. By sections the averages were as follows: Northern, 0.1 inch; Central, 1.4 inches; Southern, 1.8 inches.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 13; partly cloudy, 8; cloudy, 9. The duration of sunshine was nearly normal, the percentage of the possible amount being 70 at Charles City; 60 at Davenport; 72 at Des Moines; 64 at Dubuque; 52 at Keokuk; and 56 at Sioux City.

WIND.—Southwest winds prevailed. The highest velocity reported was 48 miles per hour from the south, at Sioux City, Woodbury County, on the 25th.

APRIL NORMALS FOR IOWA—1890-1912.

Normal temperature for April, 49.0°.
Warmest April, 1896, with mean temperature of 54.5°.
Coldest April, 1907, with mean temperature of 41.5°.
Normal April precipitation, 2.94 inches.
Wettest April, 1897, with total precipitation of 5.35 inches.
Driest April, 1907, with total precipitation of 1.32 inches.
Average depth of snowfall in April, 2.0 inches, (1892 to 1912, inclusive).
Greatest snowfall in April, 6.0 inches, in 1893.
Least snowfall in April, trace, in 1897, 1898, and 1902.
Average number of days with 0.01 inch or more of precipitation, 8.
Prevailing direction of wind, northwest.
Average number of clear days, 12; partly cloudy, 9; cloudy, 9.

MAY.

May was warm and moderately dry, but on the whole the conditions were favorable for agricultural pursuits. The average temperature was 2.6° above normal, and the rainfall, 1.17 inches below the average of past years. The rainfall was, however, well distributed throughout the month, and fairly well distributed geographically, the only sections reporting less than an inch being Carroll, southeastern Harrison, northern Cass and Mills Counties. Over a part of Cherokee and Buena Vista Counties the monthly amount exceeded 6.00 inches, but more than half of it came in a heavy downpour on the 26th-27th. Over the central and south-central counties, heavy showers occurred on the 10th or 11th, during which several stations received more than 3.00 inches. The heavy rainfall in Cherokee County on the 26th-27th did considerable damage by washing plowed fields and taking out several bridges. The temperature was above the normal except from the 11th to 17th, inclusive, and on the 28th and 29th. The lowest temperatures generally occurred on the 14th, when the minimum was near or below the freezing point in all but the extreme southern counties, and heavy frost occurred in many localities, but no material damage was done except to prevent the germination of corn that had been planted. Rapid progress was made in plowing, planting and re-planting. Owing to poor seed, cold weather, cut and wire worms, considerable replanting was necessary, but at the close of the month nearly all of the corn was planted and the early planting was up, and showed a fair to good stand. The cool weather and frequent showers were beneficial to all small grains and grasses. Spring seeding of timothy and clover were especially in good condition. Fruits were only in fair condition. Apple trees failed to produce the usual amount of bloom, due probably to over-bearing and the drought of last year. Cherries will be about two-thirds of a crop, but plums will yield well.

Temperature.—The monthly mean temperature for the State, as shown by the records of 111 stations was 62.7°, which is 2.6° above the normal for Iowa. By sections the mean temperatures were as follows: Northern section, 60.1°, which is 1.6° above the normal; Central section, 63.0°, which is 2.8° above the normal; Southern section, 64.9°, which is 4.8° above the normal. The highest monthly mean was 66.6°, at Keokuk, Lee County, and the lowest monthly mean, 57.6°, at Estherville, Emmet County, and at Sibley, Osceola County. The highest temperature reported was 97°, at Pacific Junction, Mills County, on the 26th; the lowest temperature reported was 29°, at Council Bluffs, Pottawattamie County, on the 14th, at Decorah, Winneshiek County, on the 14th, at Pacific Junction, Mills County, on the 14th, and at Washta, Cherokee County, on the 17th. The average monthly maximum was 88° and the average monthly minimum was 34°. The greatest daily range was 45°, at Council Bluffs, Pottawattamie County, and at Fort Dodge, Webster County. The average of the greatest daily ranges was 37°.

Precipitation.—The average precipitation for the State, as shown by the records of 118 stations, was 3.33 inches, which is 1.17 inches below the normal. By sections the averages were as follows: Northern section, 3.60 inches, which is 0.95 inch below the normal; Central section, 3.22 inches, which is 1.25 inches below the normal; Southern section, 3.17

inches, which is 1.30 inches below the normal. The greatest amount, 6.41 inches, occurred at Alta (near) Buena Vista County, and the least, 0.72 inches, at Atlantic, Cass County. The greatest amount in twenty-four hours, 4.42 inches, occurred at Des Moines, Polk County, on the 10th-11th. Measurable precipitation occurred on an average of 10 days.

SNOW.—No snowfall was reported.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 14; partly cloudy, 11; cloudy, 6. The duration of sunshine was slightly above the normal, the percentage of the possible amount being 77 at Charles City, 68 at Davenport, 77 at Des Moines, 62 at Dubuque, 68 at Keokuk, and 67 at Sioux City.

WIND.—Southwest winds prevailed. The highest velocity reported was 43 miles an hour from the south, at Sioux City, Woodbury County, on the 26th.

MAY NORMALS FOR IOWA, 1890-1912.

Normal temperature for May, 59.8°.
Warmest May, 1896, with mean temperature of 65.5°.
Coldest May, 1907, with mean temperature of 53.5°.
Normal May precipitation 4.48 inches.
Wettest May, 1892, with total precipitation of 8.77 inches.
Driest May, 1894, with total precipitation of 1.87 inches.
Average number of days with 0.01 inch or more of precipitation, 10.
Prevailing direction of wind, southeast.
Average number of clear days, 12; partly cloudy, 11; cloudy, 8.

JUNE.

The first and second decades of the month were unusually cool and cloudy, but the last decade was generally clear and dry with the temperature considerably above the normal. The average temperature for the month was, however, 2.6° below the average of June for past years. Light frost occurred on low ground in a few localities in the northern counties on the 7th but no damage was done. The 1st, 2d and 4th were also exceptionally cool days; the lowest temperature reported being 34° at Alton, Sioux County, on the 4th, and at Larrabee, Cherokee County, on the 7th. Higher temperatures prevailed after the 20th, the highest occuring between the 26th and 29th, when all but one station in the state reported maximum readings of 90° or higher, the highest being 101° at several stations. Showers were frequent, quite well distributed, but generally light during the first and second decades. After the 20th the weather was very dry, only a few light and widely scattered showers being reported during the last 4 days.

From an agricultural view point, the month was very favorable, notwithstanding the fact that the weather was too cool for corn during the first 20 days. Small grain, grass and potatoes made rapid growth, and at the close of the month, rye, fall wheat, and early oats were beginning to ripen in the southern counties, and all grains were headed out and filling nicely in the northern counties. The warm, dry weather during the last week or ten days was very beneficial to small grain in checking the development of rust and smut. It was also beneficial to corn which made rapid growth but was still uneven in stand and size. There was more than the usual amount of replanting done on account of poor seed, cool weather and cut and wire worms. Considerable clover and some timothy was put up in fine condition during the last 7 days. The yields of cherries and strawberries were not up to the average, but the size and quality of cherries were much better than usual. At the close of the month all crops are in good condition, but late potatoes, late planted corn, pastures, garden truck and fruit, especially bush berries, would be benefited by rain.

Temperature.—The mean monthly temperature for the State, as shown by the records of 113 stations, was 66.2°, which is 2.6° below the normal for Iowa. By sections the mean temperatures were as follows: Northern Section, 64.4°, which is 3.0° below the normal; Central Section, 66.3°, which is 2.7° below the normal; Southern Section, 67.8°, which is 2.2° below the normal. The highest monthly mean was 70.8°, at Tipton, Cedar County, and the lowest monthly mean, 62.4°, at Sibley, Osceola County. The highest temperature reported was 101°, at Baxter, Jasper County, on the 28th, at Forest City, Winnebago County, on the 29th, at Odebolt, Sac County, on the 28th, and at Pacific Junction, Mills County, on the 27th and 28th; the lowest temperature reported was 34°, at Alton, Sioux County, on the 4th, and at Larrabee, Cherokee County, on the 7th. The average monthly maximum was 95°, and the average monthly minimum was 42°. The greatest daily range was 48°, at Washta, Cherokee County. The average of the greatest daily ranges was 36°.

Precipitation.—The average precipitation for the State, as shown by the records of 121 stations, was 2.74 inches, which is 1.78 inches below the normal. By sections the averages were as follows: Northern Section, 2.26 inches, which is 2.31 inches below the normal; Central Section, 3.17 inches, which is 1.20 inches below the normal; Southern Section, 2.80 inches, which is 1.82 inches below the normal. The greatest amount, 5.71 inches, occurred at Harlan, Shelby County, and the least 0.78 inch at Rock Rapids, Lyon County. The greatest amount in twenty-four hours 3.04 inches occurred at Harlan, Shelby County, on the 13th. Measurable precipitation occurred on an average of 7 days.

Sunshine and Cloudiness.—The average number of clear days was 15; partly cloudy, 9; cloudy, 6. The duration of sunshine was above the normal, the percentage of the possible amount being 86 at Charles City; 75 at Davenport; 74 at Des Moines; 73 at Dubuque; 66 at Keokuk; and 64 at Sioux City.

Wind.—Southeast winds prevailed. The highest velocity reported was 36 miles an hour from the south, at Sioux City, Woodbury County, on the 2nd.

JUNE NORMALS FOR IOWA—1890-1912.

Normal temperature for June 69.4°.
Warmest June, 1911, with a mean temperature of 75.7°.
Coldest June, 1903, with mean temperature of 64.6°.
Normal precipitation for June, 4.37 inches.
Wettest June, 1890, with total precipitation of 7.76 inches.
Driest June, 1911, with total precipitation of 1.82 inches.
Average number of days with 0.01 inch or more of precipitation, 9.
Prevailing direction of wind, southeast.
Average number of clear days, 13; partly cloudy, 10; cloudy, 7.

JULY.

From the view point of the agriculturist, July, 1912, was an exceptionally favorable month. The average temperature was 1.2° above the normal and the rainfall was only 0.73 inch below the average of past years.

The temperature was generally above the normal during the first decade of the month, and was below the seasonable average most of the time after the 15th, although there were one or two days during that period when the day temperatures approached very near to or slightly above the century mark. The coldest period was between the 15th and 19th, inclusive, when the minimum temperatures were generally below 50° over the northern and central districts, the lowest being 38° at Rock Rapids on the 17th.

The rainfall came in the form of local showers generally accompanied by thunder and lightning, and in a few localities by hail and wind squalls. The showers were, however, well distributed throughout the month and fairly well distributed geographically, but the greater amounts of rainfall were reported from the northern and central counties, and the least from the southwestern counties. The only sections reporting less than 2.00 inches were in Cass, Adair, Taylor, northern Montgomery, Wayne, Appanoose and Delaware counties. From there the amounts increased to 6.60 inches in Washington County and 7.40 inches in Mitchell County, the average for the state being 3.71 inches, which is 1.44 inches more than was reported for July, 1911, and 1.85 inches more than in July, 1910. All parts of the state received enough moisture to keep growing crops in prime condition, except in a few localities in some of the southern counties where late corn, pastures and potatoes would have been benefited by a more generous supply.

As most of the showers occurred at night, rapid progress was made in haying and harvesting, and the bulk of the hay and small grain crops were secured in fine condition. Threshing was well advanced by the end of the month, in the southern, and good progress was made in the central districts. Early reports from threshers indicated an abnormally large yield of all small grain, except in the southeastern counties where winter wheat was light on account of winter killing. Corn made an exceptionally rapid growth, and in spite of the late spring, poor seed, and the ravages of cut and wire worms, which necessitated much re-planting, the crop was only a few points below the average of past years on July 31. All of the crop is strong and vigorous and gives promise of a large yield. Potatoes and pastures were generally in good condition.

Temperature.—The monthly mean temperature for the State, as shown by the records of 116 stations, was 74.6°, or 1.2° above the normal for Iowa. By sections the means were as follows: Northern, 72.7°, or 0.6° above the normal; Central, 74.7°, or 1.0° above the normal; Southern, 76.5°, or 2.0° above the normal. The highest monthly mean was 78.7°, at Northboro, Page County; and the lowest mean was 70.0°, at Sibley, Osceola County. The highest temperature was 103°, at Little Sioux, Harrison County, on the 14th, and at Clarinda, Page County, on the same date; the lowest temperature reported was 38° at Rock Rapids, Lyon County, on the 17th. The average monthly maximum was 98°, and the average monthly minimum, 49°. The greatest daily range was 44°, at Decorah, Winneshiek County, and at Spencer, Clay County. The average of the greatest daily ranges was 36°.

Precipitation.—The average precipitation for the State, as shown by the records of 123 stations, was 3.71 inches, or 0.73 inch less than the normal. By sections the averages were as follows:: Northern, 4.68 inches, or 0.40 inch more than the normal; Central, 3.60 inches, or 0.91 inch less than the normal; Southern, 2.85 inches, or 1.69 inches less than the normal. The greatest amount, 7.56 inches, occurred at Grand Meadow, Clayton County, and at Guthrie Center, Guthrie County; and the least, 1.17 inches, at Greenfield, Adair County. The greatest amount in 24 consecutive hours, 3.43 inches, occurred at Washington, Washington County, on the 20th. Measurable precipitation occurred on an average of 10 days.

Sunshine and Cloudiness.—The average number of clear days was 17; partly cloudy, 10; cloudy, 4. The duration of sunshine was about that usually experienced, the percentage of the possible amount being 76 at Davenport, 80 at Des Moines, 75 at Dubuque, 72 at Keokuk, and 71 at Sioux City.

Wind.—South winds prevailed. The highest velocity reported was 40 miles an hour from the northwest, at Sioux City, Woodbury County, on the 14th.

JULY NORMALS FOR IOWA, 1890-1912.

Normal temperature for July, 73.6°.
Warmest July, 1901, with mean temperature of 82.4°.
Coldest July, 1891, with mean temperature of 68.5°.
Normal July precipitation, 3.95 inches.
Wettest July, 1902, with total precipitation of 8.67 inches.
Driest July, 1894, with total precipitation of 0.63 inch.
Average number of days with 0.01 inch or more of precipitation, 8.
Prevailing direction of wind, southwest.
Average number of clear days, 17; partly cloudy, 10; cloudy, 4.

AUGUST.

The temperature was generally below the normal during the first 15 days, but was above the average during the latter half of the month. The average rainfall was but slightly below the normal, the deficiency being only 0.21 inch. All of the precipitation came in the form of local showers and practically all of them were accompanied by thunder and lightning, and in a few instances by wind squalls. The showers were fairly well distributed throughout the month, and with the exception of an abnormally heavy downpour over Dubuque, and nearby counties on the night of the 18th and 19th, and heavy showers in the west central counties during the third week, and a deficiency of moisture over the southeastern counties, the rainfall was well distributed geographically. The frequent showers interfered with threshing and stacking small grain, and damaged some of it in shocks, but they were of material benefit to late corn, potatoes and pastures. Under the effects of a plentiful supply of moisture and the high temperatures that prevailed during the latter half of the month, and especially the last week, corn made very rapid progress toward maturity; but owing to the large amount of replanting done, the crop as a whole is 10 days or two weeks later than usual, and will require most favorable conditions to fully mature before the 10th of October.

TEMPERATURE.—The monthly mean temperature for the State, as shown by the records of 111 stations, was 71.0°, or 0.8° less than the normal. By sections the mean temperatures were as follows: Northern, 68.9°, or 1.4° less than the normal; Central, 71.2°, or 0.7° less than the normal; Southern, 72.8°, or 0.5° less than the normal. The highest monthly mean was 75.0°, at Northboro, Page County, and at Ottumwa, Wapello County. The lowest monthly mean was 65.8°, at Grand Meadow, Clayton County. The highest temperature reported was 101°, this occurring at 8 stations, and with one exception, on the 25th, the lowest temperature reported was 40°, at 4 stations, on the 3d, 4th or 14th. The average monthly maximum was 95°, and the average monthly minimum was 47. The greatest daily range was 46°, at Little Sioux, Logan and Spencer. The average of the greatest daily ranges was 34°.

PRECIPITATION.—The average precipitation for the State, as shown by the records of 120 stations, was 3.78 inches, or 0.21 inch less than the normal. By sections the averages were as follows: Northern, 4.60 inches, or 1.08 inches more than the normal; Central, 3.81 inches, or 0.24 inch less than the normal; Southern, 3.01 inches, or 1.39 inches less than the normal. The greatest amount, 7.90 inches, occurred at Fayette, Fayette County, and the least, 0.89 inch, at Washington, Washington County. The greatest amount in twenty-four consecutive hours, 5.50 inches, occurred at Olin, Jones County, on the 19th. Measurable precipitation occurred on an average of 10 days.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 15; partly cloudy, 10; cloudy, 6. The duration of sunshine was less than the normal, the percentage of the possible amount being 65 at Charles City; 69 at Davenport; 64 at Des Moines; 64 at Dubuque; 61 at Keokuk; and 73 at Sioux City.

Southwesterly winds prevailed. The highest velocity reported was 39 miles an hour from the south, at Sioux City, Woodbury County, on the 11th.

AUGUST NORMALS FOR IOWA, 1890—1912.

Normal temperature for August, 71.7°.
Warmest August, 1900, with mean temperature of 77.4°.
Coldest August, 1890, with mean temperature of 68.4°.
Normal August precipitation, 3.61 inches.
Wettest August, 1903, with total precipitation of 6.64 inches.
Driest August, 1901, with total precipitation of 1.29 inches.
Average number of days with 0.01 inch or more of precipitation, 7.
Prevailing direction of wind, south.
Average number of clear days, 16; partly cloudy, 10; cloudy, 5.

SEPTEMBER.

The period of high temperatures that began on August 30th continued until September 9th, the temperature gradually increasing, and culminating with readings above the century mark at several stations in the southern section on the 8th and 9th. The highest temperature reported was 104° at Ottumwa on the 8th. Much cooler weather prevailed after the 9th, and the temperature was below the normal nearly every day after the 12th; the lowest occurring generally on the 26th or 29th, when heavy to killing frosts with temperatures near or below the freezing point were reported from all sections of the state. Showers were frequent and the amounts of rainfall were fairly well distributed, except over Jefferson, Wapello, Davis and Appanoose Counties, where the total for the month was considerably less than one inch. The greatest amounts are reported from the west-central counties. Rain fell somewhere in the State on every day of the month except the 30th; and as a result threshing was delayed and considerable grain in shock and stacks was damaged. The rains, however, put the ground in excellent condition for fall plowing and seeding, and were very beneficial to pastures and meadows. Corn made unusually rapid progress toward maturity during the first 12 days of the month, but the cool weather following checked the rapid development, and about 20 per cent of the crop was more or less damaged by the killing frosts and freezing temperatures during the last week. The total yield will, however, be greater than was ever before produced in the State.

Temperature.—The monthly mean temperature for the State, as shown by the records of 109 stations, was 62.1°, or 1.6° less than the normal. By sections the mean temperatures were as follows: Northern, 60.3°, or 1.8° less than the normal; Central, 62.2°, or 1.4° less than the normal; Southern 63.7°, or 1.8° less than the normal. The highest monthly mean was 67.4°, at Keokuk, Lee County, and the lowest monthly mean was 57.6°, at Rock Rapids, Lyon County, and at Sibley, Osceola County. The highest temperature reported was 104°, at Ottumwa, Wapello County, on the 8th; the lowest temperature reported was 24°, at Bedford, Taylor County, on the 26th and 30th. The average monthly maximum was 95°, and the average monthly minimum was 30°. The greatest daily range was 47°, at Bedford. The average of the greatest daily ranges was 34°.

PRECIPITATION.—The average precipitation for the State, as shown by the records of 119 stations, was 3.98 inches, or 0.57 inch greater than the normal. By sections the averages were as follows: Northern, 3.09 inches, or 0.32 inch less than the normal; Central, 5.14 inches, or 1.90 inches more than the normal; Southern, 3.70 inches, or 0.13 inch more than the normal. The greatest monthly amount, 10.12 inches, occurred at Audubon, Audubon County, and the least, 0.28 inch, at Centerville, Appanoose County. The greatest amount in 24 consecutive hours, 4.10 inches, occurred at Guthrie Center, Guthrie County, on the 2d. Measurable precipitation occurred on an average of 11 days.

SNOW.—A trace of snow occurred at Marshalltown on the 18th, at Northwood, on the 26th and at Storm Lake on the 17th.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 12; partly cloudy, 8; cloudy, 10. The duration of sunshine was somewhat less than the normal, the percentage of the possible amount being 63 at Charles City, 60 at Davenport, 52 at Des Moines, 58 at Dubuque, 63 at Keokuk and 56 at Sioux City.

WIND.—Southwest winds prevailed. The highest velocity reported was 40 miles an hour from the west, at Sioux City, Woodbury County, on the 5th.

SEPTEMBER NORMALS FOR IOWA, 1890-1912.

Normal temperature for September, 64.1°.
Warmest September, 1897, with mean temperature of 70.9°.
Coldest September, 1896, with mean temperature of 58.5°.
Normal September precipitation, 3.19 inches.
Wettest September, 1911, with total precipitation of 5.12 inches.
Driest September, 1899, with total precipitation of 0.93 inch.
A trace of snow fell in the State during September, 1908, 1911 and 1912.
Average number of days with 0.01 inch or more precipitation, 7.
Prevailing direction of wind, south.
Average number of clear days, 15; partly cloudy, 8; cloudy, 7.

OCTOBER.

October, 1912, was characterized by an unusually long period of fine Indian summer weather during the latter half of the month; there being only one storm period, of short duration during that time. The first half of the month, however, gave an excess of rainfall, but most of it came during a few heavy showers, so the month, as a whole, was exceptionally pleasant and favorable for farm operations and other out-door work. The mean temperature was about normal, there being an excess of only 0.3°. There was no very cold weather until the 23d, when freezing temperatures occurred in all parts of the state, being the first killing frost in the counties adjacent to the Mississippi River. Another and generally colder period occurred near the close of the month; the lowest temperature at most stations being recorded on the 30th.

While rain fell on an average of 6 days, most of the rain came between the 9th and 11th, and was much heavier in the southern than in the northern counties. A few flakes of snow, being the first of the season, were observed at numerous stations in the southern half of the state on the 30th or 31st. Considering the season of the year and the comparatively few rainy days there was more than the usual number of thunderstorms. A very destructive electric storm occurred in the vicinity of Dubuque on the afternoon of the 20th, during which considerable property was destroyed by fire.

The dry, clear weather was very favorable for drying out the corn crop and harvesting potatoes. Corn was not quite dry enough at the end of the month for cribbing, although considerable husking was done during the last decade of the month. Fall plowing progressed rapidly and winter grains and pastures are in fine condition.

Temperature.—The monthly mean temperature for the State, as shown by the records of 114 stations, was 52.2°, or 0.3° above the normal for Iowa. By sections the mean temperatures were as follows: Northern, 50.3°, or 0.2° above the normal; Central, 52.2°, or 0.4° above the normal; Southern, 54.0°, or 0.2° above the normal. The highest monthly mean was 56.6°, at Bloomfield, Davis County, and the lowest monthly mean 46.4°, at Rock Rapids, Lyon County. The highest temperature reported was 92°, at Bonaparte, Van Buren County, on the 6th; the lowest temperature reported was 16°, at Inwood, Lyon County, on the 30th. The average monthly maximum was 85°, and the average monthly minimum was 24°. The greatest daily range was 52°, at Keosauqua, Van Buren County. The average of the greatest daily ranges was 38°.

Precipitation.—The average precipitation for the State, as shown by the records of 120 stations, was 2.97 inches, or 0.62 inch more than the normal. By sections the averages were as follows: Northern, 1.88 inches, or 0.39 inch less than the normal; Central, 3.33 inches, or 0.89 inch more than the normal; Southern, 3.71 inches, or 1.36 inches more than the normal. The greatest amount, 5.77 inches, occurred at Bloomfield, Davis County, and the least, 1.03 inches, at Decorah, Winneshiek County. The greatest amount in 24 consecutive hours was 2.60 inches on the 11th, at Bloomfield, Davis County. Measurable precipitation occurred on an average of 6 days.

Snow.—The first snowfall of the season occurred on the last day of the month, being confined to the southern half of the state. Only two stations reported more than a trace.

Sunshine and Cloudiness.—The average number of clear days was 21; partly cloudy, 3; cloudy, 7. The duration of sunshine was considerably above the normal, the percentage of the possible amount being 72 at Charles City; 74 at Davenport; 75 at Des Moines; 67 at Dubuque; 71 at Keokuk; and 75 at Sioux City.

Wind.—South winds prevailed. The highest velocity reported was 48 miles an hour from the south, at Sioux City, Woodbury County, on the 28th.

OCTOBER NORMALS FOR IOWA—1890-1912.

Normal temperature for October, 51.8°.

Warmest October, 1900, with mean temperature of 59.3°.

Coldest October, 1895, with mean temperature of 46.0°.

Normal October precipitation, 2.32 inches.

Wettest October, 1900, with total precipitation of 3.91 inches.

Driest October, 1895, with total precipitation of 0.47 inches.

Normal snowfall for October, 0.4 inch.

Two stations reported measurable amounts, and several reported a trace of snowfall on October 31, 1912, all of which were in the southern part of the state.

Greatest snowfall in October, 3.6 inches in 1898.

Average number of days with 0.01 inch or more precipitation, 6.

Prevailing direction of wind, northwest.

Average number of clear days, 16; partly cloudy, 7; cloudy, 8.

NOVEMBER.

November, 1912, was an ideal month for gathering the largest corn crop ever produced in this state, and for all other outdoor work. The weather was mild and dry, with a great excess of sunshine, there being an average of 18 clear days, 8 partly cloudy, 4 cloudy, and an average of only 2 days with an appreciable amount of precipitation. During the past 23 years, there have been only four Novembers that gave a higher mean temperature than obtained during the past month, and only one with a smaller number of rainy days. While a few of the nights were moderately cold, the days were generally mild and pleasant, and corn husking was interfered with on only one day, so that rapid progress was made in that work, and at the close of the month nearly all of the crop had been harvested. With the exception of a rather severe thunderstorm at Clarinda on the 5th, no storms of consequence were reported, and but little snow fell; the average snowfall being a trace in the northern and central sections of the state, and 0.1 inch in the southern section. The greatest monthly snowfall was 1.0 inch at Stockport, Van Buren County.

TEMPERATURE.—The monthly mean temperature for the state, as shown by the records of 112 stations, was 40.1°, or 4.2° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 38.0°, or 4.3° higher than the normal; Central, 40.3°, or 4.6° higher than the normal; Southern, 41.9°, or 3.7° higher than the normal. The highest monthly mean was 44.4°, at Keokuk, Lee County; and the lowest monthly mean, 34.7°, at Rock Rapids, Lyon County. The highest temperature reported was 77°, at Northboro, Page County, on the 11th; and the lowest temperature reported was 6°, at Inwood, Lyon County, on the 24th. The average monthly highest was 69°; and the average monthly lowest was 14°. The greatest daily range was 47°, at Lake Park, Dickinson County, and at Rock Rapids, Lyon County. The average of the greatest daily ranges was 37°.

PRECIPITATION.—The average precipitation for the state, as shown by the records of 123 stations, was 0.98 inch, or 0.41 inch less than the normal. By sections the averages were as follows: Northern, 0.95 inch, or 0.36

inch less than the normal; Central, 1.03 inches, or 0.40 inch less than the normal; Southern, 0.96 inch, or 0.48 inch less than the normal. The greatest amount, 2.38 inches, occurred at Storm Lake, Buena Vista County, and there was none, at Rock Rapids, Lyon County. The greatest amount in any 24 consecutive hours, 2.38 inches, occurred at Storm Lake, on the 12th. Measurable precipitation occurred on an average of 2 days.

SNOW.—The average fall for the Northern Section was a trace, for the Central a trace, and for the Southern 0.1 inch. For the state the average was a trace. Stockport, Van Buren County, reported the greatest monthly snowfall, 1.0 inch.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 18; partly cloudy, 8; cloudy, 4. The duration of sunshine was much above the normal, the percentage of the possible amount being 69 at Charles City; 66 at Davenport; 81 at Des Moines; 57 at Dubuque; 69 at Keokuk, and 74 at Sioux City.

WIND.—Northwest winds prevailed. The highest velocity reported was at the rate of 48 miles an hour from the northwest, at Sioux City, Woodbury County, on the 22d.

NOVEMBER NORMALS FOR IOWA—1890-1912.

Normal temperature for November, 35.8°.

Warmest November, 1899, with mean temperature of 43.9°.

Coldest November, 1896, with mean temperature of 29.6°.

Normal precipitation for November, 1.45 inch.

Wettest November, 1909, with total precipitation of 5.39 inches.

Driest November, 1904, with total precipitation of 0.15 inch.

Average depth of snowfall for November, 2.4 inches (1892 to 1912 inclusive).

Greatest snowfall in November, 8.7 inches in 1898.

Least snowfall in November, trace in 1912.

Average number of days with 0.01 inch or more of precipitation, 5.

Prevailing direction of wind, northwest.

Average number of clear days, 13; partly cloudy, 8; cloudy, 9.

DECEMBER.

December, like November and the latter half of October, was unusually mild and pleasant, with high average temperatures, deficiency of precipitation, excess of sunshine and no storms of importance. It was the warmest December since 1896, and the mean temperature has been exceeded only twice, December, 1891, and 1896, since state-wide observations began in 1890. The 12th was generally the coldest day, but the lowest temperature recorded in the state, —13°, occurred at Inwood, Lyon County, on the 6th.

The precipitation was light, there being only 62 per cent of the normal amount and most of it came during the first five days. After the 5th, only light snow flurries occurred at most stations. The amount of snowfall was also very light, and especially so over the central and southern districts, where the average amount for the month was only 0.6 inch. The greatest amounts of snowfall were reported from the extreme north central counties. The clear, mild and dry weather was favorable for all kinds of out-door work, but the ground is very dry and more snow is needed for fall sown grains.

Temperature.—The monthly mean temperature for the state, as shown by the records of 115 stations, was 29.2°, or 5.6° higher than the normal for Iowa. By sections the mean temperatures were as follows: Northern, 26.3°, or 5.4° higher than the normal; Central, 29.8°, or 6.0° higher than the normal; Southern, 31.6°, or 5.4° higher than the normal. The highest monthly mean was 34.8°, at Ottumwa, Wapello County; and the lowest monthly mean, 21.6°, at Rock Rapids, Lyon County. The highest temperature reported was 64°, at Keokuk, Lee County, on the 5th; the lowest temperature reported was —13°, at Inwood, Lyon County, on the 6th. The average monthly highest was 55°, and the average monthly lowest was zero. The greatest daily range was 46°, at Inwood, Lyon County. The average of the greatest daily range was 38°.

Precipitation.—The average precipitation for the state, as shown by the records of 122 stations, was 0.74 inch, or 0.45 inch less than the normal. By sections the averages were as follows: Northern, 0.91 inch, or 0.12 inch less than the normal; Central, 0.71 inch, or 0.49 inch less than the normal; Southern, 0.59 inch, or 0.74 inch less than the normal. The greatest amount, 1.75 inches, occurred at Northwood, Worth County, and the least, 0.10 inch, at Lake Park, Dickinson County, and at Sheldon, O'Brien County. The greatest amount in any 24 consecutive hours, 1.30 inches, occurred at Chariton, Lucas County, on the 1st. Measurable precipitation occurred on an average of 3 days.

Snow.—The average snowfall for the state was 1.1 inches. By sections the averages were as follows: Northern, 2.2 inches; Central, 0.4 inch; Southern, 0.8 inch. The greatest monthly amount, 11.0 inches, occurred at Northwood, Worth County.

Sunshine and Cloudiness.—The average number of clear days was 18; partly cloudy, 7; cloudy, 6. The duration of sunshine was much above the normal, the percentage of the possible amount being 64 at Charles City; 71 at Davenport; 73 at Des Moines; 55 at Dubuque; 66 at Keokuk; and 67 at Sioux City.

Wind.—Southwest winds prevailed. The highest velocity reported was 47 miles an hour from the north, at Sioux City, Woodbury County, on the 1st.

DECEMBER NORMALS FOR IOWA—1890-1912.

Normal temperature for December, 24.4°.

Warmest December, 1891, with mean temperature of 32.3°.

Coldest December, 1909, with mean temperature of 15.5°.

Normal precipitation for December, 1.20 inches.

Wettest December, 1911, with total precipitation of 2.57 inches.

Driest December, 1910, with total precipitation of 0.37 inch.

Average depth of snowfall for December, 6.2 inches (1892 to 1912 inclusive).

Greatest amount of snowfall in December, 15.9 inches in 1897.

Least amount of snowfall in December, 1.1 inches in 1912.

Average number of days with 0.01 inch or more of precipitation, 5.

COMPARATIVE DATA FOR THE STATE—ANNUAL.

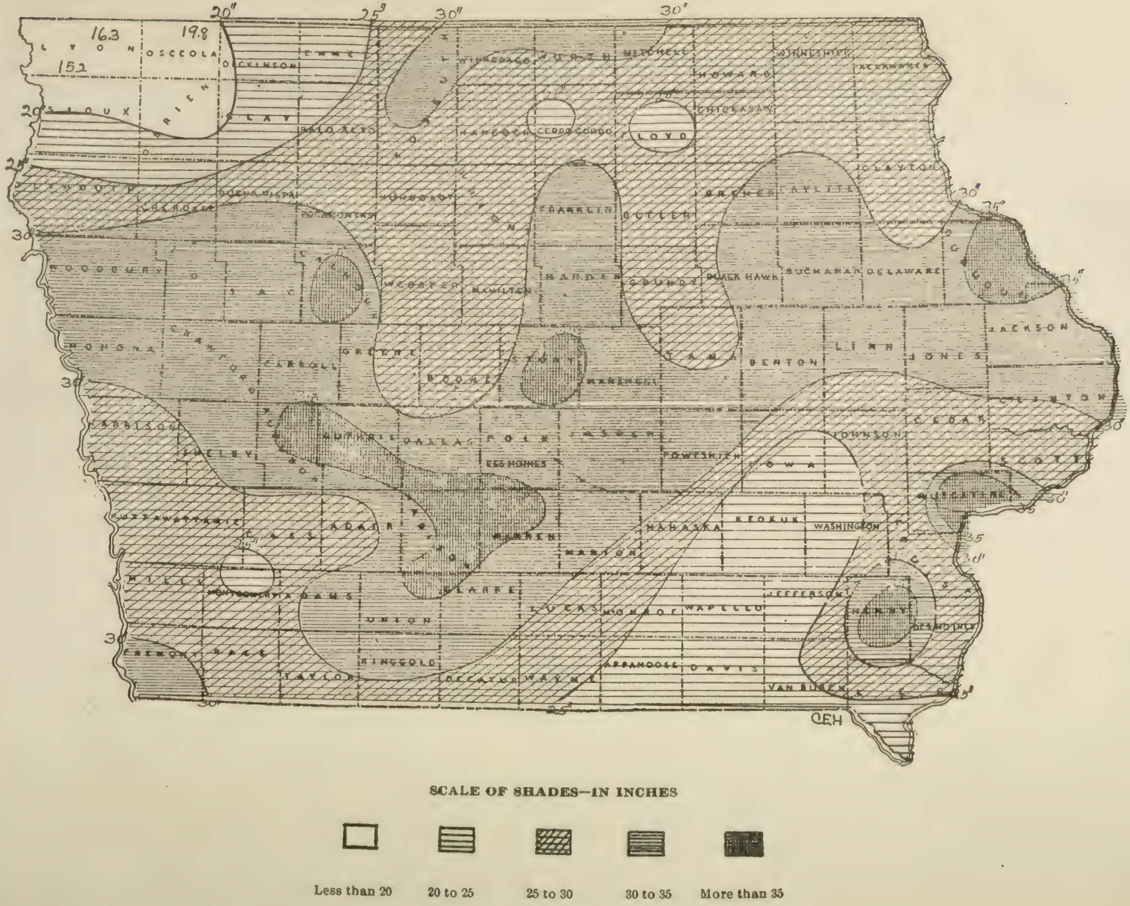
	Temperature					Precipitation in inches			
	Mean annual	Highest	Date	Lowest	Date	Annual	Greatest annual	Least annual	Av. snowfall
1890	48.0	110	July 13	—27	January 22	31.30	45.74	16.00	------
1891	47.3	106	August 9	—31	February 4	32.90	49.05	23.48	------
1892	46.6	104	July 11	—38	January 19	36.58	48.77	24.78	34.2
1893	45.7	102	July* 13	—36	January 14	27.59	33.27	19.19	37.2
1894	49.7	109	July 26	—37	January 25	21.94	29.81	15.65	19.2
1895	47.2	104	May 28	—33	February 1	26.77	35.25	18.57	26.0
1896	48.6	104	July 3	—20	January 4	37.23	51.60	28.68	22.6
1897	47.8	106	July* 23	—30	January 25	26.98	36.18	20.21	38.8
1898	47.7	103	August 20	—25	December 31	31.34	55.47	19.51	40.3
1899	47.3	104	September 6	—40	February 11	28.68	42.06	21.79	23.4
1900	49.3	103	August 3	—27	February 15	35.05	47.33	25.05	25.8
1901	49.0	113	July 22	—31	December 15	24.41	37.69	16.35	38.5
1902	47.7	98	July 30	—31	January 27	43.82	58.80	20.14	28.0
1903	47.2	101	August 24	—27	December 13	35.39	50.53	26.41	19.4
1904	46.3	100	July 17	—32	January 27	28.51	38.93	19.34	29.2
1905	47.2	104	August 11	—41	February 2*	36.56	52.26	24.66	38.3
1906	48.4	102	July 21	—32	February 10	31.60	44.34	20.63	32.8
1907	47.4	102	July 5	—31	February 5	31.61	43.90	19.93	24.0
1908	49.5	101	August 3	—18	January 29	35.26	49.98	24.11	22.7
1909	47.4	103	August* 15	—26	February* 15	40.01	53.48	27.20	49.0
1910	48.6	108	July 16	—35	January 7	19.87	27.99	12.11	23.4
1911	49.5	111	July* 3	—35	January 3	31.37	46.77	19.74	35.3
1912	46.4	104	September 8	—47	January 12	28.89	38.13	15.25	39.5

*And other dates.

ANNUAL NORMALS FOR IOWA—1890-1912.

Annual normal temperature, 47.8.
Warmest year, 1894, with mean temperature of 49.7°.
Coldest year, 1893, with mean temperature of 45.7°.
Annual normal precipitation, 31.45 inches.
Wettest year, 1902, with total precipitation of 43.82 inches.
Driest year, 1910, with total precipitation of 19.87 inches.
Average annual snowfall, 30.8 inches.
Greatest annual snowfall, 49.0 inches in 1909.
Least annual snowfall, 19.2 inches, in 1894.
Average number of days with 0.01 inch or more precipitation, 81.
Prevailing direction of wind, northwest.
Average number of clear days, 164; partly cloudy, 104; cloudy, 97.

TOTAL PRECIPITATION, 1912.


20"
25"
30"
30"
35"
16.3
19.8
15.2
LYON
OSCEOLA
DICKINSON
EMMET
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
O'BRIEN
CLAY
PALO ALTO
KOSSUTH
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
CLAYTON
FAYETTE
BREMER
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
DES MOINES
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE
CEH
SCALE OF SHADES—IN INCHES
Less than 20
20 to 25
25 to 30
30 to 35
More than 35

CLIMATE AND CROP REVIEW

SEASON 1912.

Notwithstanding the fact that both the average temperature and the average precipitation were below the normal, and especially so during the growing season, the year 1912, was, from an agricultural standpoint, the most productive year in the history of Iowa. The yield of all staple farm crops was far in excess of the average of past years. Considering the fact that the spring was late and cold, seed poor, cut and wire worms destructive, and the unusually great amount of replanting done, the abnormally large yield of corn is remarkable; the estimated yield being nearly 5 bushels per acre more than was ever produced in the state, and 12 bushels per acre more than the average of the past 22 years.

The first three months of the year gave the lowest average temperature and the most snow of any like period since the establishment of the Weather Service in Iowa. January was the coldest month ever experienced in the history of Iowa. Not only was it the coldest, but the duration of the extremely cold period broke all previous records. The severe cold weather caused a great amount of damage to water pipes and mains, and suffering among the poor people and live stock, but fortunately the ground was covered by a thick mantle of snow which protected the fall sown grains.

With the exception of low temperatures during the first 12 days and the heavy snow storm over the southern and eastern counties on the night of the 25th and 26th, February was a very pleasant winter month. The high winds accompanying the snow storm in the southern counties caused the snow to drift badly, and as a result traffic on highways and railroads was delayed. Many highways were blocked for two or three days.

March was one of, if not the coldest month of that name on record, and it gave more snow than any month of any year since state-wide observations began in 1890. The first half of the month was remarkable for the persistency of low temperatures, the mean being from 10° to 25° below the normal almost daily. The latter half of the month was milder, but on only one or two days was the mean temperature above the normal or the minimum temperature above the freezing point. However, a decided change to spring-like conditions set in toward the close of the month, during which time the snow melted rapidly, and by the 31st it had practically disappeared, except where it lay in drifts. Heavy snowstorms occurred on the 14th-15th and 20th, which were injurious to railroad traffic. Many trains were delayed from 10 to 24 hours, and on some of the branch lines trains were abandoned for one or two days. In the southern half of the state, ice in the rivers went out between the 24th and 28th, but in the extreme northern counties the ice was intact on the 31st. Practically all of the frost was out of the ground by the close of the month. No field work was practicable, but fall sown grains were showing up in good condition after the disappearance of the heavy snow, which had covered the fields since December 17th.

The most important features of April were the destructive wind storms at Earlham and Boone, on the 13th, and the unusually heavy snowstorm over the southern and eastern counties on the 17th. Thirty-six stations within the area of the storm reported an average of 4.0 inches of snowfall; the greatest amount being 12.0 inches at Wapello. As a whole, the month was quite favorable for farm operations, but owing to the fact that no field work was done in March, spring seeding was not completed until the close of the month. At the end of the month the early sown oats were up. grass was improved and some stock was in pasture. Cherry and plum trees were beginning to bloom in the southern counties, but in the remainder of the state the buds were still dormant or just beginning to swell.

May was warm and moderately dry, but on the whole the conditions were favorable for agricultural pursuits. The average temperature was above the normal, but freezing temperatures occurred in all but the extreme southern counties on the 14th, though no material damage was done except to prevent the germination of corn that had been planted. Owing to poor seed, cold weather, cut and wire worms, considerable replanting was necessary, but at the close of the month nearly all of the corn was planted and the early planting was up. The cool weather and frequent showers were beneficial to small grains and grasses.

From an agricultural viewpoint, June was a very favorable month, notwithstanding the fact that the weather was too cool for corn during the first 20 days. The average temperature and rainfall were below normal, but temperatures ranging from 90° to 101° were recorded between the 26th and 29th, and light showers were frequent prior to the 20th. After the 20th the weather was very dry. All vegetation made rapid growth, however, and at the close of the month small grains were beginning to ripen in the southern and were headed out and filling nicely in the northern part of the state.

The temperature was generally above the normal during the first decade of July, and was below the seasonable average most of the time after the 15th. although there were one or two days during that period when the day temperatures approached, or were slightly above, 100°. The showers were generally light, but all parts of the state received enough moisture to keep growing crops in prime condition except in a few localities in the southern counties, where late corn, pastures and potatoes would have been benefited by a more generous supply. As most of the showers occurred at night, rapid progress was made in haying and harvesting, and the bulk of the hay and small grain crops were secured in fine condition. Threshing was well advanced by the end of the month in the southern, and good progress was made in the central districts.

The temperature was generally below the normal during the first 15 days, and above the average during the latter half of August. Although the average rainfall was slightly below the normal, showers were frequent and fairly well distributed. The frequent showers interfered with threshing and stacking small grain, and damaged some of it in shocks, but they were of material benefit to late corn, potatoes and pastures. Corn made rapid progress toward maturity, but owing to the large amount of late planted corn, the crop as a whole was 10 days to two weeks later than usual.

The first 10 days of September were excessively warm, but much cooler weather prevailed after that date with killing frosts and temperatures near or below the freezing point on the 26th and 29th. Rain fell somewhere in the state on every day of the month, except the 30th, and as a result threshing was delayed and considerable grain in shock and stacks was damaged. The rains, however, put the ground in excellent condition for fall plowing and seeding, and were very beneficial to pastures and meadows. Corn made unusually rapid progress during the first 12 days, but the cool weather following checked the rapid development, and from 20 to 30 per cent of the crop was more or less damaged by the killing frosts and freezing temperatures during the last week.

The first half of October was wet, but the remainder of that month and all of November and December was dry and pleasant, with much Indian Summer weather during the early part of the period. There being no storms of importance after the middle of October, rapid progress was made during October and November in gathering the largest crop of corn ever produced in the state, and practically all of the crop was in cribs by the 10th of December. The contrast between the first three and last three months of 1912 was very marked. The first three months were abnormally cold with an excessive amount of snow, while most of the last three was mild and pleasant with a great excess of clear days.

CLIMATE AND CROP BULLETINS

Summaries of Weekly Bulletins Issued in the Season of 1912.

BULLETIN No. 1.—For the week ending April 14.—The winter was severely cold and of long duration, and the amount of snowfall was the greatest on record. The larger part of the state was covered with snow nearly all of the time from December 20th to about March 25th. The snow went off rapidly after March 20th, but as there was but little frost in the ground, the larger part of the water was absorbed by the soil, yet all streams were at a high stage at the close of the month, and much bottom ground, especially in the southern counties, was flooded. The heavy mantle of snow afforded a good protection to fall-sown grains and grasses and they are now in good condition, except in the counties along the Mississippi River from Scott county southward, where the snow covering was light during the cold weather in January and most of February. The past week has been favorable for field work, and much seeding, plowing and disking has been done with the soil in excellent tilth. The acreage of winter wheat is much greater than it was last year, but the extent of spring seeding depends largely on the conditions during the next few days, as only about one-half to two-thirds of the acreage intended for small grain has yet been seeded. Many potatoes have been planted and gardens made. Fruits have remained nearly dormant as yet, and except peaches and pears, are reported to have been uninjured by the low winter temperatures. Live stock came through the winter in fairly good condition, but in most sections the supply of hay and rough feed has been entirely or nearly exhausted. While the season opens a little later than usual, the conditions at present are favorable for a good crop year.

BULLETIN No. 2—For the week ending April 21.—The third week in April was colder than usual, the average daily deficiency in temperature being about 5 degrees. Freezing temperature was reported from the larger part of the state on several mornings, and one of the heaviest April snowstorms on record in this state occurred over the southern and eastern counties on the seventeenth. Several stations reported from seven to eight inches of snowfall, but crops and fruit were not far enough advanced to receive damage from the snow or freezing temperature. The heavy showers on the afternoon and night of the twentieth gave an excess of precipitation for the week. Farming operations were somewhat retarded in the counties where the snowfall was heaviest, but in the larger part of the state fair progress has been made in seeding and plowing, with the soil in fine working condition. Seeding of small grain is nearly finished in northern and western counties, but in the eastern and southeastern counties only about 75 to 80 per cent of that work has been done. Late reports show that there was more fall wheat winter killed in southern and eastern sections than was indicated last week. Many fields are spotted and some of them will be plowed up and replanted to other crops, but for the state as a whole, fall-sown grains are in fine condition. Grass is starting nicely, and in some localities stock is in pasture.

BULLETIN No. 3.—For the week ending April 28.—While the temperature was only slightly below the normal, the nights were cool. Frost was general, and freezing temperature occurred on one or two nights in the northern counties. The weather was, however, favorable for field work; the only precipitation being light showers on the twenty-fifth, and light to moderately heavy rains on Sunday, the twenty-eighth, over the southern and western sections. Seeding is practically finished, most of the early potatoes have been planted and much ground has been plowed, preparatory to corn planting. The cool weather has retarded the growth of vegetation, but early-sown oats are up and show a good stand. Grass is improving and in many localities stock is in pasture. Cherries and plums are beginning to blossom in the southern counties, but in the remainder of the state the buds are still dormant or just starting to swell. The spring pig crop suffered severe loss during March on account of the cold, wet weather, but April pigs are doing well.

BULLETIN No. 4.—For the week ending May 5.—The past week was warmer than usual, the daily excess of temperature ranging from 2 to 5 degrees, and weather conditions were generally favorable for rapid progress in farming operations. Heavy rains on April 28th, and frequent showers during the week did, however, delay field work to some extent in southern counties. Light to copious showers occurred in nearly all parts of the state on the 2d, 3d or 4th, and gave ample moisture for present needs. The warm rains, and the high temperatures during the last four days have caused an unusually rapid growth of all vegetation. Most of the trees are green, fruit trees are in blossom, and grass and small grain have made a decided improvement. All fruit trees, except apples, show an abundance of bloom. Spring sown grain and grasses have made a good start, and show a strong, vigorous stand. Much ground has been prepared for corn, and some planting was done in many localities during the latter half of the week. With favorable weather planting will be general during the coming week. Most of the live stock is in pasture and obtaining sufficient feed.

BULLETIN No. 5.—For the week ending May 12.—The weather during the first five days of the week was ideal for field work and the growth of vegetation. The average temperature was above the normal, though no unusually high temperatures prevailed, and the precipitation was deficient until Friday night and Saturday when heavy, and in many localities, excessive rains fell; the greatest amounts of rainfall being reported from the southern and central counties. All vegetation made rapid growth, and good progress was made in preparing corn ground. Considerable corn was planted in nearly all sections of the state with the soil generally in fine tilth, but the late rains and the cool weather prevailing at the close of the week will retard planting for a day or two. Meadows and pastures have made a decided improvement, and where the rainfall was heavy, a fair to good crop of hay is assured. Oats are beginning to stool nicely and all small grain is in good condition. Reports continued to show a deficiency of bloom on apple trees, but other fruits, except peaches, give promise of good yields.

BULLETIN No. 6—For the week ending May 19.—The week was cool, and cloudy, with a decided deficiency in the rainfall. There was, however, considerable excess of moisture in the southern and central district caused by heavy rains near the close of the preceding week which retarded corn planting for several days. Light to heavy frosts occurred on two or three mornings in all parts of the state, with freezing temperature in many localities on the 14th. The frosts did little or no damage to fruit, but tender garden stuff was slightly injured on low ground. The germination of corn was, however, retarded and in a few places the seed is reported to have rotted in the ground. Fair progress was made in planting corn during the latter half of the week, but only about two-thirds of the crop is in. Some of the early planted corn is up and shows a fairly good stand. All of the early and some of the late potatoes have been planted. Spring seeding of grass and clover is in prime condition. Pastures and meadows are making good growth, and small grain crops are doing well. Cherries are not setting as well as indicated by the heavy bloom. Plums give promise of full crop, and apples are setting fairly well considering the small amount of bloom. Generally the crop conditions are fairly good, needing higher temperatures and occasional warm rains to make the outlook bright and satisfactory.

BULLETIN No. 7.—For the week ending May 26.—The week was warm and generally dry. The temperature ranged from normal in northern to 9 degrees above the normal in southern counties and the rainfall was decidedly deficient except in the vicinity of Dubuque where 2.59 inches fell. Almost ideal conditions prevailed during the week for field work, and the time was well improved. Corn planting is finished in many localities and all of it that has been planted since the 11th inst., is coming up nicely and shows a fairly good stand. Much of the early planting has been replanted on account of cold weather, weak seed and the ravages of wire worms. The fields are generally clean and the soil is in good condition. Small grain, grass in pastures and meadows, potatoes and garden truck have made good progress under the effects of high temperature and abundance of sunshine, but now need more moisture to keep up normal growth. Rye is heading in southern, and fall wheat is two feet high in central districts. The following report by the Secretary, State Horticultural Society shows the condition of fruit: "Apples, 35 per cent; pears, 61; American plums, 80; cherries, 55; grapes, 65; red raspberries, 57; black raspberries, 65; blackberries, 35; currants, 72; gooseberries, 86; strawberries, 70 per cent of a full crop. Ben Davis, Jonathan and Wealthy apple trees will not bear much fruit this year. Ben Davis trees are in very poor condition. There was some winter killing of blackberry and raspberry canes."

BULLETIN No. 8.—For the week ending June 2.—The past week was exceptionally favorable for field work, notwithstanding the fact that excessive rain fell over some of the northwestern counties on May 26th and 27th, and heavy showers occurred in the southwestern and west central districts on Friday night, and light to copious showers occurred in all other parts of the state some time during the week. Considerable damage was done in Cherokee county by the heavy downpour of rain. Fields were badly washed and several bridges were taken out by high water. The average temperature was about normal, although the nights were cool. Planting and replanting of corn is nearly finished. The late planting is coming up and shows a fair to good stand. The first cultivation has begun, and the fields are generally clean and in good condition. Small grain and grass have continued to make rapid progress except in a few localities, especially in the southwestern and southeastern counties where the rainfall was deficient prior to the last week. The late rains will, however, be of great benefit in all sections. Winter wheat and rye are heading in northern, and the first cutting of alfalfa was harvested in southwestern counties. Most of the late planted potatoes are up and give promise of a good crop. Strawberries are beginning to ripen in southern districts with prospects of fair to good yields.

BULLETIN No. 9.—For the week ending June 9.—The past week was unseasonably cold, and over the larger part of the state much drier than usual. The daily mean temperature ranged from 6 to 8 degrees below the normal. Light frost occurred on low ground in the northern counties on the morning of the 7th, but no material damage was done. The rainfall was generally light, but copious to heavy showers occurred in the Des Moines valley on the 5th. The conditions were favorable for field work, and rapid progress was made in cultivating corn. Practically all of the early planting has been plowed once, and much of it the second time. Small grain and grass, especially spring seeding of timothy and clover have made good growth, but the hay crop will not be up to the normal. Clover cutting will begin in the southern counties during the coming week, with prospects of a light yield. Cherries and plums promise a fairly good crop, but the "June Drop" of apples is heavy on some varieties.

BULLETIN No. 10.—For the week ending June 16.—This has been the best growing week of the season. The average temperature has been about normal, and while the sunshine was somewhat deficient, the rainfall was generally above the average. Showers were frequent and fairly well distributed, but the amounts of rainfall varied from .01 inch in southern Taylor County to 4.44 inches in Calhoun County. The rainfall was also heavy in Wayne and Decatur Counties, where severe local storms occurred, accompanied by high winds and some hail, which, with the heavy rain, did considerable damage to fields and crops. All crops have made good progress, but in many localities, oats and some fall wheat, on rich ground, are getting rank and have a tendency to lodge if wet weather continues. Corn has improved during the past few days, and the cultivation of the fields is being rushed as rapidly as possible. The fields are generally clean, and the soil is in fine condition. Pastures are unusually good. In fact there is more grass in some sections than is needed for the small number of cattle on hand. While the hay crop will not be quite up to the average, it will be much better than last year. Potatoes are fine, and in many localities there has been sufficient rainfall to mature the early crop. Homegrown strawberries of excellent quality are on the market. Cherries are ripening, and are larger and of better quality than last season. Plums give promise of good yield.

Bulletin No. 11.—For the week ending June 23.—The first four days of the week were abnormally cool and generally cloudy with frequent, but very light scattered showers. The last three days were moderately warm, clear and pleasant, but the average temperature was about 8 degrees below the weekly normal. The rainfall was also much below the average, but the rains of the previous week were sufficient to keep the ground in fine condition. It has been too cool for the rapid growth of corn, but the crop is doing as well as could be expected. It is, however, small for the season, and very uneven in height. Some of it is just coming up, while some is nearly knee high, and is being cultivated the third time. The fields are generally very clean. Small grain is doing exceptionally well, though in a few localities some rust is reported in winter wheat and smut in oats. Rye is beginning to ripen in the southern counties, but for the state as a whole the small grain harvest will be about a week later than usual. Blue grass is much better than for the past several years, but timothy and clover is variable; some sections reporting very good crops, while in many localities they are light, and the average yield of hay will be a little below the average. Potatoes continue very promising. Berries and cherries are of extra fine quality, but the yields are below normal. Plums will be much above, and apples below the average.

Bulletin No. 12.—For the week ending June 30.—The past week was very warm and unusually dry; the only rainfall reported being a few local and generally light showers in the southwestern and southeastern counties on one day. The high temperatures and bright sunshine have been favorable for the rapid advancement of corn and curing clover hay. Corn has made very rapid growth, but it is still uneven in height. Some of it has been laid by, and all of the fields are clean. Some of the late planted corn is beginning to show the effect of the dry weather, but if rain comes within the next week or ten days it will continue to make good progress. Early corn is in fine condition; the root system being sufficiently developed to reach moist soil. The dry weather has also been generally favorable for small grain in checking the development of rust and smut, and stiffening the straw, thereby lessening the possibility of lodging. Oats and other small grains have headed in all parts of the state, and are filling well. Rye, fall wheat and early oats are beginning to ripen in the southern counties and with favorable conditions the harvest will begin during the coming week. Considerable clover and some timothy hay were put up in fine condition, and haying will be general in a few days. While all crops are still in good condition, late potatoes, late planted corn, pastures, garden truck and fruit would be benefited by rain.

Bulletin No. 13.—For the week ending July 7.—The weather during the past seven days was exceptionally favorable for farming operations, and in most sections for the growth of crops. The average temperature was about 5 degrees above the normal, and while the rainfall was decidedly below the average, many localities received light to copious, and in a few sections, moderately heavy showers. The warm, dry weather, and the excessive sunshine were very beneficial for haying and harvesting. Much hay was put up in the best condition; the yield being somewhat below the normal. Most of the rye and winter wheat, and many early oats are in shock in the southern counties, and harvest has begun in central and northern sections. All small grains give promise of good to extra good yields, but late oats need rain to fill to the best advantage. Considerable rust is reported, but probably no more than usual. Corn continued to make rapid growth, and half of it is nearly up to the normal height for this season of the year. Some of the earliest planted fields in the extreme southeastern counties are beginning to tassel, while much of the late planted corn is less than 12 inches high. Pastures remain generally good, but are beginning to dry up and should have rain at once. Corn, potatoes, late oats, fruit and garden truck also need rain. Much of the timothy, especially in the southern counties, will be saved for the seed.

Bulletin No. 14.—For the week ending July 14.—Under the effect of high temperatures and frequent and fairly well distributed copious showers all crops have made rapid progress. There was, however, considerable damage done in some localities by hail, heavy rains and high winds in lodging grain, but this will be more than counterbalanced by the benefit received by corn, late grains, spring seeding of timothy and clover, pastures, potatoes, gardens and fruits. Corn made very rapid growth, and a large portion of it is now up to the normal for the middle of July. Many of the early fields in the southern counties are beginning to tassel, and all of it has a good color. Owing to the fact that in most localities the showers came at night, rapid progress was made in haying and harvesting. About all of the rye, fall wheat and early oats in the southern counties are in shock, and threshing will begin in that section of the state during the coming week, with prospects of good to heavy yields. About half of the hay has been put in fine condition. The quality of timothy is extra good, and while the yield is not quite up to the average, it is much better than last year. Reports continue to indicate that much of the timothy will be saved for seed, especially in southern counties. All field crops are now in prime condition, and with occasional good showers give promise of large yields.

Bulletin No. 15.—For the week ending July 21.—The past week was unusually cool; the average daily deficiency of temperature ranging from 6 to 10 degrees. The average precipitation was much above the normal, except over the three southern tiers of counties, where it was very dry up to Saturday night. In the three northern tiers of counties, and in portions of the central sections the rainfall was heavy; nearly all stations reporting more than 2.00 inches, and several more than 3.00 inches. The first four days of the week were, however, clear and dry, and rapid progress was made in haying and harvesting. Threshing is now general in the southern counties, and early reports indicate yields much in excess of the average of past years. In the northern sections where the late rains were heavy, oats are badly lodged and will be difficult to harvest. The rains will also prevent work in the fields in that section for two or three days, but they have been of great benefit to corn, pastures, potatoes, spring sown grasses, gardens and fruits. Corn made good growth during the week, even though the weather was cool, and the crop is in good condition and improving daily.

Bulletin No. 16.—For the week ending July 28.—The conditions during the past week were almost ideal for growing crops, and for haying, harvesting and threshing. The temperature was about normal, and while the rainfall was generally deficient, nearly all parts of the state received light to copious showers. Some localities in the southern districts, however, need rain badly for corn, potatoes and pastures, but for the state as a whole all crops are in excellent condition. Haying is nearly finished, and the crop has been put up in fine shape. The yield of hay is better than anticipated and the quality is extra good. The small grain harvest has progressed rapidly, and the bulk of it will be completed by the end of the coming week. Early reports show some exceptionally large yields and fine quality of grain. The yield of winter wheat ranges from twenty-five to fifty bushels per acre; oats thirty to sixty-five and barley, twenty-two to thirty bushels. No timothy has yet been threshed, but a large acreage has been cut for seed. Corn has made rapid growth, and the early fields are shooting nicely, but the crop as a whole is not yet quite up to the normal in size and development; although the prospects are good for better than an average yield if favorable weather continues. Potatoes are generally in good condition and give promise of a large crop.

Bulletin No. 17.—For the week ending August 4.—The past week was cool and dry; the average daily deficiency of temperature being about 6 degrees, and only a few light and widely scattered showers occurred. The conditions were fine for harvesting, stacking and threshing, but were too cool and dry for corn, and too dry for pastures and potatoes. Nearly all of the small grain has been secured in fine condition, and rapid progress is being made in threshing. The yields of wheat, oats, rye and barley are exceptionally large except in the southeastern counties where the winter wheat is very light. Corn is still in good condition, but needs rain and warmer weather. Pastures are drying up in many localities, and potatoes also need rain.

Following is a summary of reports from crop correspondents on Aug. 1st. Much of the late and replanted corn is still backward, but all of it is strong and vigorous. The average condition of the crop is placed at 93 per cent or four points better than on July 1st. The estimated condition of pastures is 92 per cent and potatoes 94 per cent, showing a loss of three and four points respectively during the past month. On August 1, 1911, corn was rated at 69 per cent, potatoes 34 and pastures 38 per cent. Threshing has not yet become general in all parts of the state, but early reports indicate an average yield of twenty-five bushels per acre of winter wheat; spring wheat, 18; oats, 40; barley, 32; rye, 21. These figures are subject to change, but if maintained by final reports, yield per acre of rye and winter wheat will exceed all previous records and the yields of spring wheat, oats and barley have been exceeded only once during the past 22 years.

BULLETIN No. 18.—For the week ending August 11.—The past week was cool and showery, with an excess of cloudiness and humidity. The average daily deficiency of temperature was about eight degrees, and while the average rainfall was about normal, many localities reported an excess of moisture. In some sections showers occurred every working day of the week, which delayed threshing and stacking, but the bulk of shock threshing is finished in the southern, and is well advanced in the northern districts. Reports continue to show large yields of small grain. Corn is still doing well, and with favorable weather in the future will make one of the largest crops ever produced in this state. Many of the early planted fields in southern and central counties are now in the roasting ear stage, and the late planted fields are making rapid growth, but would do better with warmer weather. Pastures and potatoes are improving, and are generally in good condition. Fall plowing for winter wheat has begun in southern sections.

BULLETIN No. 19.—For the week ending August 18.—Showery weather continued during the week, with the average temperature about normal, but the week closes with much warmer weather. Showers were frequent, and the rainfall heavy over the western two-thirds of the state; the largest amounts of rainfall being reported from the Missouri Slope, where many stations received more than three, and a few more than four inches. Slow progress was made in threshing and stacking, and some grain in shocks was more or less damaged by wet, cloudy weather. Corn has made fair growth, and over the western half of the state has received sufficient moisture to mature the crop. Pastures and aftermath in meadows have been revived, and are now in fine condition. Late potatoes also give promise of a good crop. Telegraphic reports indicate heavy rains in northeastern part of the state during the 24 hours ending 7 a. m., August 19th. Dubuque reports 5.16 inches, and Waterloo, Black Hawk county, 4.00 inches.

BULLETIN No. 20.—For the week ending August 25.—The weather conditions were much more favorable during the past week than they were during the preceding two weeks. The temperature was above the normal, and very few showers occurred after the 20th. The rainfall was, however, excessive in a few localities on the night of the 18th, and especially over the northern counties of the east central district. Dubuque reported 5.23 inches; Delaware, 4.82 and Waterloo, 4.00 inches. A heavy shower also occurred in the southern part of Page county on the 20th. Rapid progress has been made in stacking and threshing, since the 21st, but considerable grain, in shock and stack, has been damaged by the wet weather of the previous week. Under the effect of high temperatures, corn made rapid growth, and much of it, in early planted fields, has passed the roasting ear stage and is beginning to dent. The late planted fields are in fine condition, but will require warm, dry weather during all of September, to fully mature. Pastures are in excellent condition, and meadows promise a fair second crop of hay. Early apples, early grapes and plums are being harvested. Plums and grapes are plentiful, but the apple crop is unusually light. A large acreage is being plowed for winter wheat.

BULLETIN No. 21.—For the week ending September 1.—In respect to temperature and moisture the past week was about all that could be desired for the advancement of corn and for general farm work. The lack of moisture is, however, beginning to retard plowing in some parts of the state. The temperature was considerably above, and the rainfall below the normal until Saturday night when copious showers occurred in many localities. Corn made very rapid progress toward maturity, and gives promise of an exceptionally large yield if no damaging frost occurs before October 10th, which is the average date of the first killing frost of autumn at Des Moines. The effect of dry weather was beginning to show on pastures and potatoes, but the showers on the night of August 31, and September 1st, will be of great benefit. Good progress was made in stacking and threshing, and practically all of the small grain is now in stack or has been threshed.

BULLETIN No. 22.—For the week ending September 8.—The past week was one of the hottest of the season, with abundant sunshine, and a high percentage of humidity. Showers were frequent during the first half of the week, and were quite general, although the rainfall was very light in the southeastern and northwestern counties. The heaviest rainfall occurred over the southwestern quarter of the state, and copious showers were reported from the central and northeastern districts. More than five inches of rain fell in Audubon and Guthrie counties, and more than four inches in Shelby county. The weather was unusually favorable for forcing the maturity of corn, but the crop will require four more weeks of dry, warm weather to put it beyond danger of killing frost. Much of the corn is dented, but a large portion of the crop is only in the roasting ear stage. Considerable threshing was done, except where the rainfall was the heaviest, and there rapid progress was made in plowing and seeding fall grains. Pasturage is generally in good condition and late potatoes are doing fairly well.

BULLETIN No. 23.—For the week ending September 15.—The first two days were very warm, but the latter half of the week was cool, with temperatures near the frost line in the northern counties on the morning of the 14th. More than the usual amount of cloudiness prevailed, and showers were frequent, although the southeastern part of the state received very little moisture until Saturday night when heavy rain fell. Corn made very satisfactory progress, and the early planted fields, in the southern counties, are now being cut for silage and fodder. The abnormally high temperatures during the first ten days of the month caused corn to mature rapidly, and probably fifty per cent of the crop is safe from a moderate frost, but the late fields need two or three weeks of good warm, dry weather to put them beyond danger of injury of even a heavy frost. Considerable corn was gathered for seed during the week, and most farmers will probably secure their seed at the earliest date possible. Threshing has been further delayed by showers, but pastures, meadows and late potatoes were greatly benefited by the needed moisture. The showers have also been of great benefit to fall plowing and seeding, and that work is being rushed.

Bulletin No. 24.—For the week ending September 22.—The third week in September was abnormally cold, with an excess of cloudiness and frequent showers. The average daily temperature was about 7 degrees below the normal, and light frost occurred in exposed places on the 19th and 21st, but no damage was done. Showers occurred in some parts of the state on five days, and while the rainfall was fairly well distributed it was generally below the normal although many localities received a slight excess. The rapid maturing of corn was retarded by cool, wet and cloudy weather, but it made considerable progress and 65 to 75 per cent of the crop is beyond injury by a moderately heavy frost. The remainder of the crop needs ten days of warm, drying weather to make it safe, and three weeks to put it beyond danger of a hard freeze. Silos are being filled and considerable corn put in shocks. Seed corn is being secured in many localities, and that work will be general during the coming week. The wet weather has also prevented much threshing being done, and considerable grain in shocks and stacks is reported to be badly damaged. The soil is in excellent condition for plowing, and where the rainfall was not too heavy fall seeding progressed rapidly. Pastures, meadows and late potatoes are doing well.

Bulletin No. 25.—For the week ending September 29.—The damp, cloudy and cold weather which prevailed during the third week of the month continued during the past seven days. Heavy to killing frosts were general, and freezing temperatures occurred in many localities on two or three mornings. Variable reports are received as to the damaging effect of the recent frosts on the late-planted corn, but the extent of injury will not be fully determined until after the crop has been harvested. Probably 20 per cent of the crop was somewhat damaged, but as a whole, the crop is remarkably large and sound in view of the fact that the spring was late, and at many times during the season the weather was not considered to be favorable. Probably 80 to 85 per cent of the total yield will be sound and merchantable, and the balance will possess much feeding value. That there was not more damage done by the frosts is due to the fact that over the large part, if not all of the state, the weather became cloudy early in the morning after each frost and remained so during the day. The final reports for the season will show that Iowa has produced one of the largest, if not the largest crops of corn and small grain in the history of the state. In fact, all crops have been good except apples. The frequent and well-distributed showers have put the ground in excellent condition for fall plowing, and considerable winter wheat was sown during the past week. Pastures are in fine condition and stock is generally healthy except some hog cholera prevailing in the southwestern counties.

IOWA CROP REPORT, JUNE 1, 1912.

Acreage of Farm Crops, Estimated Condition of Staple Crops, Fruit and Live Stock.

Reports received June 1st, from county and township correspondents of the Iowa Weather & Crop Service, show the following results as to the acreage and average condition of staple farm crops; also the condition of fruit and live stock.

Corn.—The estimated number of acres of corn planted is 9,199,610, or an increase of 336,286 acres, as compared with the area reported by the township assessors for 1911. The average condition of corn on June 1st was placed at 92 per cent, as against 105 per cent on June 1, 1911.

Oats.—The area of oats is estimated to be 4,655,100, or about 2 per cent less than the area harvested last year. The average condition is the same as on June 1, 1911, 100 per cent.

Wheat.—The area of winter wheat is placed at 333,710 acres, and spring wheat, 506,650, making a total wheat acreage of 840,360 acres, or a decrease of about 6 per cent as compared with the acreage reported by the township assessors for 1911. The estimated condition of spring wheat is 96 per cent, and winter wheat, 90 per cent, as compared with 100 per cent for both in 1911.

Barley.—Acreage sown, 294,935 acres; condition, 99 per cent, or 1 per cent less than last year.

Rye.—Acreage of rye sown, 42,970; condition of the crop, 95 per cent, or 2 points less than on June 1, 1911.

Flax.—The acreage of flax is 37,305, which is a decrease of 5 per cent from last year. Condition, 99 per cent.

Potatoes.—The acreage of the potato crop is estimated to be 124,030 acres, which is 1,296 acres less than the area planted in 1911. Condition of crop, 98 per cent.

Hay.—The acreage of tame and wild hay is 3,682,359, or a decrease of 248,122 acres. Condition, 95 per cent as compared with 88 per cent last year.

Alfalfa.—Area, 32,780 acres, which is an increase of 7 per cent over last year. The condition on June 1st was 94 per cent, as compared with 100 per cent last year.

Pastures.—The acreage is about 97 per cent, and the condition is 99 per cent or the same as last year.

Condition of fruit based on an average condition of past years:

Apples, 37 per cent; plums, 79; peaches, practically nothing; cherries, 60; grapes, 70; strawberries, 75; raspberries, 70; blackberries, 45 per cent.

Condition of Live Stock.—Cattle, 95 per cent; sheep, 97; hogs, 95; spring pigs, 81; horses, 97; foals, 92 per cent.

IOWA CROP REPORT JULY 1, 1912.

The following is a summary of reports from crop correspondents showing the estimated condition of staple crops, July 1, 1912, as compared with the average condition on that date in past years: Corn, 89 per cent; oats, 100; spring wheat, 95; winter wheat, 90; barley, 99; rye, 96; flax, 96; potatoes, 98; hay, 86; pastures, 95 per cent. On July 1, 1911, the conditions were as follows: Corn, 102 per cent; oats, 72; spring wheat, 80; winter wheat, 88; rye, 89; barley, 79; flax, 84; potatoes, 53; hay, 57; pastures, 60. The Secretary, Iowa State Horticultural Society reports condition of fruit as follows: Summer apples, 21 per cent; fall apples, 20; winter apples, 17; pears, 25; American plums, 77; cherries, 50; red raspberries, 51; black raspberries, 65; blackberries, 40; grapes, 69; currants, 70; gooseberries, 72 per cent of a full crop.

IOWA CROP REPORT, AUGUST 1, 1912.

Following is a summary of reports from crop correspondents on August 1. Much of the late and replanted corn is still backward but all of it is strong and vigorous. The average condition of the crop is placed at 93 per cent or four points better than on July 1st. The estimated condition of pastures is 92 per cent and potatoes 94 per cent, showing a loss of 3 and 4 points respectively during the past month. On August 1, 1911, corn was rated at 69 per cent, potatoes 34 and pastures 38 per cent. Reports indicate an average yield of 25 bushels per acre of winter wheat; spring wheat, 18; oats, 40; barley, 32; rye, 21. These figures are subject to change, but if maintained by final reports, the yield per acre of rye and winter wheat will exceed all previous records, and the yields of spring wheat, oats and barley have been exceeded only once during the past 22 years.

IOWA CROP REPORT, SEPTEMBER 1, 1912.

Reports made on September 1st by crop correspondents of the Iowa Weather and Crop Service, show that the condition of corn was 95 per cent, as compared with the average on that date in past years, or a gain of 2 per cent since August 1st, and 20 per cent better than on the same date last year. On a basis of prospective yield, with dry warm weather until the middle of October, the present condition would be considerably above 100 per cent, as the crop is heavily eared, and if it matures before frost comes the yield will be the largest on record in the state. It is estimated that with normal weather conditions about 30 per cent of the crop will be safe from frost on September 15th; 54 per cent on September 25th; 72 per cent on September 30th; 87 per cent on October 10th, and 96 per cent on October 15th; but with dry, warm weather until the middle of October, practically all of the crop will be out of danger.

The average condition of late potatoes was 90 per cent, or a loss of 4 points since August 1st, due to dry weather and blight in some sections of the state.

The reports indicate that only about one-third of the threshing has been done, and up to the present time, the average yields per acre of small grains are as follows:

Winter wheat, 25 bushels; spring wheat, 18; oats, 46; barley, 33; rye, 22; and timothy seed, 4.8 bushels. The estimated acreage of timothy cut for seed is 308,800 acres, or 82,000 acres more than were harvested last year. If the above average of 4.8 bushels per acre is maintained until all of the crop has been threshed, the total yield will be about 1,493,000 bushels, but all figures as to average yields are subject to change when the final report for the season has been tabulated.

FINAL REPORT FOR THE STATE—TOTAL YIELD OF SOIL PRODUCTS—VALUE AT FARM PRICE, DECEMBER 1, 1912.

Following is a summary of reports from crop correspondents of the Iowa Weather & Crop Service, showing the average yield per acre and total yields of staple soil products, and the average price at the farms or nearest stations, December 1, 1912:

As a whole, the crop season of 1912 was the most productive one in the history of Iowa. The total yield of corn, oats and winter wheat was far in excess of any previous year, and all other crops, except apples, were nearly up to the maximum of production. Notwithstanding the fact that the average price of soil products is much below the prices prevailing on December 1, 1911, the total value of this year's crop exceeds that of last year by about $3,429,514, and if good seed corn had been used last spring an additional $10,000,000 could have been added to the value of this year's crop.

Corn.—The revised estimate of the acreage of corn is 9,199,610 acres, or 336,286 acres more than was planted last year, as shown by the report of the township assessors. The average yield per acre for the state this year is 45.8 bushels, making a total yield of 421,368,400 bushels, or 33,019,480 bushels more than was ever before produced in the state in one year, the next largest yield being 388,348,920 bushels in 1906. The average farm price on December 1st was 36 cents per bushel, making the aggregate value $151,698,624. Last year the estimated yield was 32.9 bushels per acre, aggregate yield 281,366,600 bushels; average farm price was 54 cents per bushel, making the aggregate value $151,937,964 or $239,340 more than the value of this year's crop. Fully one-third of this year's crop is either soft or chaffy, due to the fact that much of the crop was not fully matured when the severe killing frosts, and in many sections of the state, freezing temperatures, occurred between the 26th and 29th of September. The weather has, however, been generally favorable since October 11th, and husking is now completed in many localities and will be practically completed within the next week.

Oats.—The area harvested was 4,665,100 acres; average yield, 44.4 bushels per acre; total yield, 206,949,700 bushels; aggregate value at 27 cents per bushel, $55,876,419, or $3,408,984 less than the value of last year's crop. The total yield this year was, however, 86,741,400 bushels more than was produced in 1911, and 5,349,700 bushels in excess of the big crop of 1895.

SPRING WHEAT.—Area harvested, 506,650 acres; average yield 18.7 bushels per acre; total yield, 9,486,700 bushels; price per bushel, 76 cents; total value, $7,209,892.

WINTER WHEAT.—Area harvested, 333,710 acres; average yield per acre, 24.3 bushels; total yield, 8,133,530 bushels; average price, 78 cents per bushel; total value, $6,344,153.

BARLEY.—Average per acre, 32.5 bushels; total yield, 9,587,760; farm price, 50 cents; total value, $4,793,880.

RYE.—Average yield, 20.7 bushels per acre; total crop, 888,530 bushels; farm price, 61 cents; total value, $542,003.

FLAX SEED.—Average per acre, 11.3 bushels; total product, 423,060 bushels; total value at $1.31 per bushel, $554,208.

POTATOES.—Average yield per acre, 104 bushels; total yield, 12,904,500 bushels; average price, 44 cents; total value, $5,677,980.

HAY (Tame).—Average yield, 1.6 tons; total yield, 4,287,600 tons; average price, $9.89; total value, $42,404,364.

HAY (Wild).—Average yield, 1.4 tons; total yield, 1,085,440 tons; average price, $7.43; total value, $8,064,819.

TABULATED CROP SUMMARY.

Corn	421,368,400 Bu.	$151,698.624
Oats	206,949,700 Bu.	55,876,419
Spring wheat	9,486,700 Bu.	7,209,982
Winter wheat	8,133,530 Bu.	6,344,153
Barley	9,587,760 Bu.	4,793,880
Rye	888,530 Bu.	542,003
Flax seed	423,060 Bu.	554,208
Potatoes	12,904,500 Bu.	5,677,980
Hay (Tame)	4,287,600 Tons	42,404,364
Hay (Wild)	1,085,440 Tons	8,064,819
Pasture and grazing	Estimated	85,000,000
Ensilage	Estimated	4,000,000
Timothy seed	Estimated	2,300,000
Clover seed	Estimated	516,736
Alfalfa and millet	Estimated	1,200,000
Sweet corn	Estimated	1,137,500
Pop corn	Estimated	600,000
Fruit crops	Estimated	5,500,000
Garden truck	Estimated	1,500,000
Miscellaneous crops	Estimated	7,500,000
Total value		$392,420,668
The estimated value of soil products for 1911 was		$388,991,154

IOWA CROPS, 1912—NUMBER OF ACRES BY COUNTIES.

COUNTIES	Corn Acres	Oats Acres	Spring Wheat Acres	Winter Wheat Acres	Barley Acres	Rye Acres	Flax Acres	Potatoes Acres	Tame Hay Acres	Wild Hay Acres	Alfalfa A	Pastures Acres
Adair	98,000	30,500	4,300	730	1,570	125	------------	1,120	42,000	3,300	40	114,800
Adams	68,500	21,800	1,200	3,800	600	20	------------	380	32,200	1,600	45	91,000
Allamakee	41,300	37,400	2,100	980	14,400	860	40	1,120	37,100	1,180	18	144,500
Appanoose	40,700	15,200	150	2,400	70	20	------------	200	34,100	1,000	------------	91,700
Audubon	87,000	37,000	7,000	500	4,000	130	------------	1,100	20,400	2,400	90	72,000
Benton	132,000	79,400	2,350	600	7,500	1,070	------------	1,300	32,000	4,500	25	96,500
Black Hawk	103,000	57,000	1,050	1,000	2,950	2,200	------------	1,530	29,000	9,600	20	99,600
Boone	118,000	60,300	2,500	630	220	90	35	1,100	26,200	13,400	40	70,600
Bremer	63,000	51,100	2,300	730	230	900	------------	1,270	18,000	20,000	20	61,200
Buchanan	88,000	52,000	1,100	1,100	2,000	1,080	------------	1,280	37,000	12,500	------------	103,000
Buena Vista	105,000	75,000	1,000	220	700	125	680	1,750	19,300	17,300	70	68,200
Butler	104,200	65,500	1,300	470	1,100	2,900	50	1,450	22,600	10,400	------------	80,300
Calhoun	124,000	102,000	380	350	500	15	370	1,900	19,400	13,800	30	57,100
Carroll	106,000	61,400	6,600	400	2,580	30	10	2,100	21,500	9,800	20	69,000
Cass	104,000	36,400	11,700	7,900	1,300	40	------------	1,350	37,800	1,790	125	104,200
Cedar	107,000	38,300	3,100	3,500	9,400	480	------------	1,100	39,000	200	20	98,300
Cerro Gordo	97,000	72,600	2,100	500	2,900	240	1,300	1,200	27,000	13,000	30	27,000
Cherokee	117,000	74,500	1,220	230	2,700	20	20	1,730	23,000	9,700	240	81,500
Chickasaw	65,000	52,200	4,400	250	4,540	490	500	1,080	26,400	12,000	------------	73,200
Clarke	54,000	19,000	200	2,300	100	25	------------	580	37,200	150	------------	97,000
Clay	90,000	70,000	2,000	65	1,500	75	2,100	970	22,600	21,400	25	81,100
Clayton	67,000	62,000	2,000	2,000	14,100	1,900	------------	1,840	50,600	1,270	25	161,100
Clinton	112,000	43,300	3,200	7,400	6,000	1,300	------------	1,050	53,000	3,200	------------	143,000
Crawford	134,000	54,000	18,300	1,200	4,940	60	------------	1,900	40,500	6,300	370	104,000
Dallas	115,000	50,000	3,500	3,700	700	70	------------	700	26,300	4,500	110	87,300
Davis	52,400	19,300	150	4,900	15	130	------------	380	36,800	70	20	228,000
Decatur	64,000	21,500	165	4,300	15	110	------------	220	34,000	400	50	107,400
Delaware	88,600	46,200	880	260	10,400	1,580	------------	970	38,000	6,700	5	116,000
Des Moines	64,500	23,900	1,600	2,800	500	200	------------	1,000	30,800	300	40	82,400
Dickinson	48,000	34,700	4,900	20	2,500	30	1,500	590	8,900	18,300	25	49,000
Dubuque	63,500	51,300	1,250	300	3,800	760	------------	2,000	50,000	650	65	134,000
Emmet	49,000	38,000	4,100	25	1,700	35	1,900	900	14,300	15,200	------------	45,500
Fayette	96,000	71,300	2,100	650	7,100	1,450	220	1,600	44,000	13,000	22	154,000
Floyd	84,000	72,200	2,900	280	1,750	1,050	330	1,300	26,000	5,200	10	61,500
Franklin	107,000	84,100	2,050	450	1,570	90	490	2,000	28,300	13,800	25	84,000
Fremont	110,000	13,200	6,700	17,500	100	150	------------	520	12,600	5,700	2,760	66,000
Greene	130,000	62,000	1,070	300	820	35	160	890	27,300	10,700	20	81,300

Grundy	105,900	68,900	1,100	750	3,120	90		3,300	22,100	7,400	15	69,000
Guthrie	97,000	45,000	3,700	750	1,070	50		540	32,400	4,450	35	113,300
Hamilton	111,500	73,000	2,150	1,170	125	10	350	800	26,800	13,900	45	80,000
Hancock	87,500	69,000	6,200	270	3,440	90	910	1,110	20,800	22,300	15	69,500
Hardin	96,000	57,800	2,360	1,270	1,050		80	1,300	25,000	10,800	30	71,500
Harrison	137,000	22,600	26,800	12,000	1,560	180		980	14,200	10,100	5,600	83,000
Henry	75,000	28,700	550	3,300	80	230		420	23,000		30	88,200
Howard	52,000	49,000	4,270	770	9,100	370	2,400	930	30,400	9,500		72,500
Humboldt	80,800	57,500	5,200	280	1,100	45	760	770	19,300	14,000	40	46,500
Ida	92,000	46,000	3,200	160	6,600	35		920	25,100	2,300	35	60,200
Iowa	93,000	41,600	3,000	1,600	1,350	350		1,390	34,300	870	22	99,600
Jackson	67,000	33,000	2,900	2,800	3,400	3,300		1,180	50,000	2,400	35	165,500
Jasper	142,000	52,500	9,150	4,300	340	150	75	1,020	41,300	1,300	15	148,900
Jefferson	60,000	22,600	1,800	6,400	240	120		340	30,000	9	20	93,000
Johnson	88,000	38,000	2,900	4,000	960	1,000		1,360	40,000	780	15	104,000
Jones	83,000	34,800	1,350	500	6,500	1,200		780	44,600	600	20	115,000
Keokuk	10,000	34,200	4,700	2,800	750	300		830	47,000	140	15	120,000
Kossuth	142,000	115,000	10,500	350	3,000	20	2,700	2,300	30,000	56,000	12	110,000
Lee	55,100	19,000	55	7,500	250	1,800		900	30,500	180	25	108,000
Linn	106,000	53,000	3,200	1,300	2,200	1,000		1,880	43,000	3,600	15	119,300
Louisa	59,500	17,800	1,200	4,000	100	900		3,400	14,400	700	15	52,000
Lucas	50,000	18,600	1,530	4,300		30		130	22,900	170		100,000
Lyon	107,000	79,000	5,900	330	11,500	50	240	5,500	11,100	11,000	160	56,600
Madison	85,000	26,000	2,800	3,400	1,600	290		820	31,200	1,450	30	108,700
Mahaska	97,000	34,700	4,800	2,500	800	260	20	700	27,400	480	35	102,000
Marion	98,000	26,400	7,000	7,300	1,720	850		730	29,000	570	9	104,300
Marshall	117,000	61,600	3,600	6,000	380	120		1,700	36,400	1,180	25	85,100
Mills	84,000	29,000	5,900	10,700	425	180		460	12,400	3,300	3,700	54,000
Mitchell	70,000	73,700	9,500	480	6,200	25	3,700	1,260	24,000	2,420	10	59,700
Monona	141,000	26,500	19,000	28,700	2,000	200	80	1,000	14,000	40,800	4,500	113,000
Monroe	39,300	9,800	5,000	4,300	30	110		240	28,000	30	5	104,300
Montgomery	90,000	16,000	9,300	13,000	470	90		530	30,000	870	600	66,000
Muscatine	71,000	19,000	2,500	4,000	3,500	2,400		2,300	24,400	900	75	77,700
O'Brien	105,000	76,000	4,000	200	8,500	50	550	1,800	21,300	9,200	30	77,000
Osceola	69,000	59,500	2,000	150	6,800	25	2,000	1,190	13,000	9,700		45,000
Page	109,000	19,100	5,600	22,000	400	300		1,300	32,200	1,300	230	90,500
Palo Alto	75,000	53,500	1,800	230	630	100	1,800	850	11,000	33,600	5	62,600
Plymouth	171,000	81,000	35,800	3,000	6,200	15	115	3,700	25,600	26,800	1,380	107,000
Pocahontas	116,500	86,800	1,920	250	650	30	1,800	1,230	15,400	23,000	40	64,000
Polk	96,300	34,200	10,500	12,000	60	190	10	1,440	26,400	4,600	60	76,000
Pottawattamie	197,000	41,600	21,200	13,200	2,200	620		2,220	37,700	9,650	6,670	118,000
Poweshiek	108,000	42,600	4,400	700	1,400	200		1,030	33,500	200		111,600
Ringgold	74,000	24,200	100	3,000	20	25		210	53,000	390		111,000
Sac	116,500	74,500	1,500	170	3,300	35	470	1,330	27,000	9,800	180	76,000
Scott	78,000	23,000	4,500	3,500	19,000	2,400		5,900	27,600	2,700	125	77,600
Shelby	129,000	42,000	14,300	900	7,500	130		1,300	31,400	5,700	280	84,000
Sioux	156,000	88,000	24,000	950	18,300	10	550	1,900	18,700	19,000	440	81,000
Story	119,000	62,000	2,200	1,900	230	75	60	700	31,300	7,000	75	69,900

IOWA CROPS, 1912—NUMBER OF ACRES BY COUNTIES—CONTINUED

COUNTIES	Corn Acres	Oats Acres	Spring Wheat Acres	Winter Wheat Acres	Barley Acres	Rye Acres	Flax Acres	Potatoes Acres	Tame Hay Acres	Wild Hay Acres	Alfalfa Acres	Pastures Acres
Tama	125,000	69,000	6,000	1,690	6,200	230	------------	2,000	38,000	3,000	------------	115,000
Taylor	71,000	22,200	1,050	6,700	370	100	------------	550	36,200	500	40	93,800
Union	63,000	23,000	800	630	215	150	------------	740	35,200	1,000	15	89,700
Van Buren	48,000	18,100	140	5,500	180	110	------------	330	34,300	100	70	131,600
Wapello	56,000	18,300	1,000	8,000	330	300	------------	760	21,600	100	------------	87,000
Warren	87,000	21,000	5,700	14,200	400	400	------------	870	35,800	650	25	118,000
Washington	90,000	38,300	2,800	3,400	250	220	------------	600	34,000	------------	15	97,500
Wayne	65,500	26,800	110	2,000	------------	85	------------	200	42,800	60	------------	98,500
Webster	132,000	91,100	4,800	450	270	40	650	1,140	27,300	25,000	60	96,000
Winnebago	57,000	32,900	17,600	20	2,900	50	2,100	790	15,500	26,500	------------	57,700
Winneshiek	74,000	63,800	13,200	430	18,800	860	1,500	1,240	43,600	6,100	5	139,000
Woodbury	178,000	55,900	13,300	12,000	3,300	50	100	1,800	24,200	13,500	3,400	99,000
Worth	52,000	45,300	17,200	120	3,000	320	4,000	670	17,200	20,800	20	56,500
Wright	104,500	76,500	31,000	400	1,100	120	580	950	30,100	12,500	7	70,900
Totals	9,199,600	4,665,100	506,650	333,710	294,935	42,970	37,305	124,030	2,901,100	781,259	32,780	9,117,100

FINAL CROP REPORT, 1912

AVERAGE YIELD PER ACRE AND TOTAL PRODUCT—BY COUNTIES

Counties	Corn		Oats		Spring Wheat		Winter Wheat		Barley		Rye		Flax Seed		Potatoes		Hay—Tame		Hay—Wild	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Tons per acre	Total Tons	Tons per acre	Total Tons
Adair	42	4,116,000	39	1,189,500	19	817,000	33	24,000	28	44,000	18	2,200	----	----------	78	87,400	1.3	54,600	1.0	3,300
Adams	44	3,015,000	42	915,600	19	22,800	28	106,400	29	17,400	27	3,400	----	----------	75	28,500	1.5	48,300	1.3	2,100
Allamakee	48	1,982,400	45	1,683,000	17	35,700	19	18,620	26	374,400	18	15,480	10	400	117	131,000	1.3	48,200	1.5	1,800
Appanoose	38	1,546,600	40	608,000	12	1,800	19	45,600	25	1,700	17	340	----	----------	38	7,600	1.2	40,900	0.8	800
Audubon	41	3,567,000	38	1,406,000	16	112,000	26	13,000	32	132,000	18	2,300	----	----------	105	115,500	1.4	28,500	1.5	3,600
Benton	51	6,732,000	44	3,493,000	16	37,600	26	15,600	31	232,500	19	20,300	----	----------	93	120,900	1.3	41,600	1.3	5,900
Black Hawk	49	5,047,000	46	2,622,000	27	28,300	28	28,000	30	88,500	22	48,400	----	----------	98	149,900	1.5	43,500	1.1	10,500
Boone	46	5,428,000	45	2,713,000	19	47,500	32	20,200	35	7,700	20	1,800	10	350	80	88,000	1.5	39,300	1.2	16,000
Bremer	43	2,709,000	36	1,839,600	16	36,800	20	14,600	42	9,700	18	16,200	----	----------	97	123,200	1.3	23,400	1.0	20,000
Buchanan	40	3,520,000	39	1,978,000	20	22,000	25	27,500	33	66,000	17	18,400	10	100	112	143,300	1.5	55,500	1.5	18,700
Buena Vista	45	4,725,000	44	3,300,000	19	19,000	24	5,300	35	24,500	18	2,300	11	7,500	96	168,000	1.6	30,900	1.4	24,200
Butler	46	4,793,200	45	2,947,500	18	23,400	19	9,000	31	34,100	20	58,000	5	300	127	184,200	1.6	36,200	1.3	13,500
Calhoun	51	6,324,000	48	4,896,000	24	9,100	27	9,400	39	19,500	20	300	8	3,000	82	160,800	2.0	38,800	1.3	17,900
Carroll	46	4,876,000	47	2,885,800	18	118,800	26	10,400	36	92,800	17	500	10	100	115	241,500	1.6	34,400	1.6	15,700
Cass	38	3,952,000	36	1,310,400	15	175,500	30	237,000	32	41,600	25	1,000	----	----------	77	103,900	1.4	52,900	2.0	3,000
Cedar	54	5,778,000	47	1,800,000	16	49,600	18	63,000	37	347,800	30	14,500	----	----------	101	111,100	1.4	54,600	1.5	300
Cerro Gordo	46	4,462,000	48	3,484,800	18	37,000	23	11,500	30	87,000	20	4,800	16	20,800	139	166,800	1.6	43,200	1.1	14,300
Cherokee	46	5,382,000	49	3,650,500	15	18,300	29	5,700	40	108,000	20	400	20	400	95	164,300	1.7	39,100	1.4	13,600
Chickasaw	54	3,510,000	42	2,292,400	17	74,800	22	5,500	35	158,900	30	14,700	10	5,000	123	132,800	1.5	39,600	1.3	15,600
Clarke	44	2,376,000	38	722,000	15	3,000	27	55,100	24	2,400	23	600	----	----------	78	45,200	1.3	48,400	0.8	120
Clay	51	4,590,000	55	3,850,000	17	34,000	21	970	36	54,000	24	1,800	13	27,300	101	98,000	1.6	36,200	1.3	27,800
Clayton	48	3,309,400	37	2,294,000	18	36,000	19	38,000	30	423,000	17	32,300	----	----------	140	257,600	1.5	75,900	1.5	1,900
Clinton	52	5,824,000	38	1,645,400	16	51,200	17	125,800	34	204,000	18	23,400	----	----------	120	126,000	1.1	58,300	1.2	3,840
Crawford	52	6,968,000	43	2,322,000	21	384,300	30	36,000	25	123,500	16	760	----	----------	65	123,500	1.5	60,700	1.2	7,600
Dallas	51	5,865,000	50	2,500,000	22	77,000	35	129,500	39	27,300	24	1,700	----	----------	98	68,600	1.7	44,700	1.4	6,300
Davis	36	1,886,400	49	945,700	12	1,800	12	58,800	25	400	15	1,950	----	----------	74	28,100	1.3	47,800	1.1	80
Decatur	42	2,688,000	39	838,500	25	4,100	29	124,700	28	420	22	2,400	----	----------	64	14,000	1.4	47,600	0.8	320
Delaware	45	3,987,000	36	1,663,200	18	15,800	25	6,500	27	280,000	18	28,400	----	----------	84	81,500	1.4	53,200	1.6	10,700
Des Moines	48	3,096,000	38	908,200	15	24,000	15	42,000	35	17,500	16	3,200	----	----------	102	102,000	1.1	33,900	1.5	450
Dickinson	39	1,872,000	47	1,630,900	12	58,800	17	240	37	92,500	28	840	11	16,500	124	64,500	1.3	11,600	1.2	22,000
Dubuque	42	2,688,000	36	1,846,800	21	26,200	24	7,200	34	129,200	18	13,700	----	----------	124	248,000	1.1	55,000	0.5	325
Emmet	40	1,960,000	47	1,786,000	13	53,300	20	500	27	45,900	13	450	9	17,100	124	111,600	1.7	24,300	1.0	15,200
Fayette	39	3,744,000	35	2,495,500	10	21,000	18	11,700	29	205,900	19	27,500	12	2,600	151	241,600	1.2	52,800	0.9	11,700

FINAL CROP REPORT, 1912

AVERAGE YIELD PER ACRE AND TOTAL PRODUCTION—BY COUNTIES

Counties	Corn		Oats		Spring Wheat		Winter Wheat		Barley		Rye		Flax Seed		Potatoes		Hay—Tame		Hay—Wild	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Tons per acre	Total Tons	Tons per acre	Total Tons
Floyd	47	3,948,000	38	2,743,600	19	55,100	25	7,000	31	64,200	22	23,100	11	3,600	121	157,300	1.7	44,200	1.2	6,200
Franklin	49	5,243,000	41	3,448,100	21	43,000	20	9,000	29	45,500	23	2,000	9	4,400	79	158,000	1.6	45,300	1.5	20,700
Fremont	36	3,960,000	33	4,356,000	13	87,100	24	420,000	30	3,000	20	3,000	----	----------	102	53,000	0.9	11,300	1.4	8,000
Greene	46	5,980,000	39	2,418,000	18	19,300	24	7,200	32	26,200	20	700	12	1,900	90	80,100	1.7	46,400	1.3	13,900
Grundy	50	5,295,000	48	3,307,000	23	25,300	29	21,700	38	118,500	17	1,500	----	----------	113	372,900	1.5	33,000	1.1	24,300
Guthrie	45	4,365,000	41	1,845,000	19	70,300	34	25,500	31	32,300	24	1,200	----	----------	111	59,900	1.9	61,500	1.5	6,700
Hamilton	45	5,017,500	37	2,701,000	18	38,700	24	28,000	30	3,700	25	250	8	2,800	107	85,600	1.7	45,500	1.1	15,300
Hancock	51	4,462,500	56	3,864,000	20	124,000	23	6,200	38	130,700	27	2,400	12	10,900	166	174,200	1.4	29,100	1.3	29,000
Hardin	47	4,512,000	46	2,658,800	21	49,600	22	27,900	30	31,500	----	----------	12	960	116	150,800	1.5	37,500	1.0	10,800
Harrison	42	5,754,000	38	858,800	14	375,200	23	276,000	27	42,100	20	3,600	----	----------	90	88,200	2.0	28,400	1.6	16,200
Henry	39	2,925,000	35	1,004,500	18	9,900	17	56,100	28	2,200	18	4,100	----	----------	70	29,400	1.4	32,200	----	----------
Howard	38	1,976,000	42	2,058,000	16	68,300	23	17,700	30	273,000	19	7,000	12	28,800	120	111,600	1.6	48,600	1.1	10,400
Humboldt	52	4,201,600	48	2,760,000	19	98,800	25	7,000	39	42,900	20	900	6	4,600	128	98,600	1.6	30,900	1.1	15,400
Ida	48	4,416,000	47	2,162,000	17	54,400	23	3,700	32	211,200	21	630	----	----------	106	97,500	1.5	37,600	1.7	3,900
Iowa	51	4,743,000	42	1,747,200	16	48,000	21	33,600	36	48,600	23	8,000	----	----------	127	176,500	1.4	48,000	1.0	870
Jackson	42	2,814,000	39	1,287,000	19	55,100	19	53,200	31	105,400	23	75,900	----	----------	134	158,000	1.4	70,000	1.1	2,600
Jasper	49	6,958,000	42	2,205,000	13	118,900	28	120,400	32	10,900	23	3,400	10	750	114	116,300	1.6	70,000	1.4	1,800
Jefferson	48	2,880,000	41	926,600	20	36,000	20	128,000	25	6,000	25	3,000	----	----------	110	37,400	1.3	39,000	1.0	10
Johnson	44	3,872,000	42	1,596,000	13	37,700	19	76,000	26	25,000	19	19,000	----	----------	85	115,600	1.2	48,000	1.3	1,000
Jones	48	4,022,400	41	1,426,800	16	21,600	22	11,000	32	208,000	22	26,400	----	----------	106	82,700	1.3	58,000	1.2	720
Keokuk	48	4,776,000	40	1,368,000	16	75,200	21	58,800	22	16,500	20	6,000	----	----------	75	62,200	1.5	70,500	1.2	200
Kossuth	48	6,816,000	50	5,750,000	19	119,500	23	8,000	30	90,000	25	500	12	32,400	143	328,900	1.8	54,000	1.5	84,000
Lee	48	2,630,400	48	912,000	18	1,000	12	90,000	27	6,800	16	28,800	----	----------	78	70,200	1.5	45,800	1.3	25
Linn	46	4,876,000	45	2,385,000	13	41,600	18	23,400	30	66,000	28	28,000	----	----------	92	173,000	1.3	55,900	1.0	3,600
Louisa	39	2,320,500	35	623,000	12	14,400	17	68,000	27	2,700	18	16,200	----	----------	63	214,200	1.1	15,800	2.0	1,400
Lucas	45	2,250,000	38	706,800	21	32,000	27	116,000	20	2,000	18	540	----	----------	78	10,100	1.6	36,000	1.1	200
Lyon	43	4,601,000	46	3,634,000	16	93,400	22	7,300	33	379,500	20	1,000	13	3,100	101	555,500	1.6	17,800	1.6	17,600
Madison	50	4,250,000	44	1,444,000	20	56,000	35	119,000	35	56,000	26	7,500	----	----------	111	91,000	1.6	49,900	1.2	1,700
Mahaska	48	4,656,000	45	1,561,500	17	81,600	27	67,500	31	24,800	28	7,300	12	240	98	68,600	1.6	43,800	1.2	580
Marion	50	1,960,000	46	1,214,400	16	112,000	32	233,600	34	68,500	25	21,200	----	----------	82	59,800	1.6	46,400	1.3	740
Marshall	54	6,318,000	46	2,833,600	19	68,400	23	138,000	34	12,900	28	3,400	----	----------	111	188,700	1.6	58,200	1.5	1,800
Mills	39	3,276,000	30	870,000	15	88,500	25	267,500	20	8,500	20	3,600	----	----------	60	27,600	1.0	12,400	1.0	3,300
Mitchell	41	2,870,000	44	3,242,800	16	152,000	19	9,100	29	179,800	25	620	12	44,400	178	224,300	1.5	36,000	1.0	2,400
Monona	42	5,922,000	30	795,000	15	285,000	24	688,800	31	62,000	25	5,000	13	1,000	88	88,000	1.9	26,600	1.9	77,500

Monroe	45	1,768,500	42	411,600	21	105,000	32	137,600	28	840	22	2,400	----	----------	65	15,600	1.2	33,600	1.0	30
Montgomery	43	3,870,000	36	576,000	16	148,800	26	338,000	31	14,600	26	2,300	----	----------	80	42,400	1.2	36,000	2.0	1,700
Muscatine	52	3,692,000	38	722,000	16	40,000	17	68,000	23	80,500	20	48,000	----	----------	70	91,000	0.9	22,000	1.0	900
O'Brien	49	5,145,000	53	4,028,000	22	88,000	22	4,400	35	297,500	20	1,000	16	8,800	120	216,000	1.3	27,700	1.7	15,600
Osceola	45	3,105,000	49	2,915,500	17	34,000	22	3,300	33	224,400	30	750	8	16,000	114	135,600	1.5	19,500	1.4	13,600
Page	45	4,905,000	38	725,800	15	84,000	28	616,000	31	12,400	20	6,000	----	----------	75	97,500	1.4	45,000	1.5	1,950
Palo Alto	51	3,825,000	49	2,621,500	15	27,000	20	4,600	41	25,800	23	2,300	13	23,400	139	120,900	1.7	18,700	1.6	53,800
Plymouth	43	7,353,000	39	2,709,000	17	598,600	21	63,000	37	229,400	22	330	11	1,300	92	340,400	1.5	38,400	1.4	37,500
Pocahontas	50	5,825,000	51	4,426,800	18	34,600	17	4,200	35	22,700	19	570	14	25,200	110	135,300	1.7	26,200	1.3	29,900
Polk	54	5,200,000	49	1,675,800	17	178,500	32	384,000	31	1,900	29	5,500	16	160	95	136,800	2.0	52,800	1.8	8,300
Pottawattamie	39	7,683,000	32	1,331,200	16	339,200	24	316,800	25	55,000	15	9,300	----	----------	76	168,700	1.1	41,500	1.0	9,600
Poweshiek	54	5,832,000	50	2,130,000	17	74,800	30	21,000	38	53,200	40	8,000	----	----------	83	85,500	1.3	43,500	1.0	200
Ringgold	38	2,812,000	36	871,200	18	1,800	24	72,000	30	600	21	520	----	----------	90	18,900	1.7	90,100	1.4	5,400
Sac	46	5,359,000	39	2,905,500	18	27,000	27	4,600	35	105,500	26	900	9	4,200	102	135,600	1.7	45,900	1.4	13,700
Scott	54	4,212,000	45	1,035,000	16	72,000	20	70,000	31	589,000	21	50,400	----	----------	134	790,000	1.3	35,900	1.4	3,800
Shelby	41	5,289,000	35	1,470,000	15	214,500	22	19,800	28	210,000	20	2,600	----	----------	78	101,400	1.2	37,700	1.2	6,800
Sioux	47	7,332,000	42	3,696,000	17	408,000	27	25,600	31	567,300	20	200	10	5,500	140	266,000	1.6	29,900	1.6	30,400
Story	50	5,950,000	46	2,852,000	19	41,800	30	57,000	22	5,000	21	1,600	10	600	110	77,000	1.9	59,400	1.5	10,500
Tama	53	6,625,000	46	3,174,000	17	102,000	27	45,600	34	210,800	20	4,600	----	----------	138	276,000	1.4	53,200	1.5	4,500
Taylor	43	3,053,000	39	865,800	10	10,500	28	187,600	33	12,200	32	3,200	----	----------	81	44,500	1.8	65,200	1.2	600
Union	45	2,835,000	45	1,035,000	19	15,200	27	17,000	30	6,400	22	3,300	----	----------	65	48,100	1.6	56,300	1.5	1,500
Van Buren	41	1,968,000	38	687,800	11	1,500	12	66,000	24	4,300	12	1,300	----	----------	93	30,700	1.3	44,600	1.1	110
Wapello	51	2,856,000	51	933,300	21	21,000	24	192,000	23	7,600	24	7,200	----	----------	60	45,600	1.6	34,600	1.5	150
Warren	49	4,263,000	47	987,000	23	131,100	35	497,000	25	10,000	26	10,400	----	----------	103	89,600	1.8	64,400	1.0	650
Washington	47	4,230,000	47	1,800,100	28	50,400	15	51,000	25	6,200	18	4,000	----	----------	112	67,200	1.2	40,800	----	----------
Wayne	39	2,644,500	39	1,045,200	20	2,200	24	48,000	----	----------	19	1,600	----	----------	101	20,200	1.4	59,900	1.2	70
Webster	52	6,864,000	53	4,828,300	25	120,000	25	11,200	26	7,000	20	800	10	6,500	100	114,000	2.0	54,600	1.5	37,000
Winnebago	41	2,337,000	48	1,579,200	15	264,000	20	400	32	92,800	14	700	10	21,000	172	135,900	1.3	20,100	1.4	37,100
Winneshiek	45	3,260,000	38	2,424,400	17	224,400	17	7,200	33	620,400	22	18,900	14	21,000	107	132,700	2.1	91,500	1.4	8,500
Woodbury	39	6,942,000	41	2,291,900	16	212,800	21	252,000	32	105,600	20	1,000	11	1,100	88	158,400	1.7	41,100	1.5	20,200
Worth	43	2,236,000	45	2,038,500	13	183,600	15	1,800	28	84,000	20	6,400	10	40,000	105	70,300	1.5	25,800	1.2	25,000
Wright	47	4,911,500	39	2,983,500	16	496,000	23	9,200	30	33,000	20	2,400	12	7,000	97	92,100	1.8	54,200	1.1	13,800
Totals		421,368,400		206,949,700		9,486,700		8,133,530		9,587,760		888,530		423,000		12,904,500		4,287,600		1,085,440
Averages	45.8		44.4		18.7		24.3		32.5		20.7		11.3		104		1.6		1.4	

Statistics by counties showing acreage, average yield and total yield of Iowa farm crops, compiled by the Iowa Department of Agriculture, from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

DATES OF KILLING FROSTS, 1912

STATIONS	Killing Frosts		STATIONS	Killing Frosts		STATIONS	Killing Frosts	
	Last in spring	First in autumn		Last in spring	First in autumn		Last in spring	First in autumn
Afton	April 7*	Sept. 26	Earlham	May 14	Sept. 26	Murray	April 19*	Sept. 30*
Albia	April 19*	Sept. 26	Elkader	May 14*	Sept. 30	New Hampton	April 27*	Sept. 26
Algona	April 27*	Sept. 26	Elliot	April 7*	Sept. 26	Northboro	April 17*	Sept. 26
Allerton	April 19*	Sept. 26	Elma	May 14	Sept. 21	Northwood	April 27*	Sept. 26
Alta	May 14	Sept. 26	Estherville	April 27*	Sept. 26	Odebolt	April 27*	Sept. 26*
Alta (near)		Sept. 26	Fairfield	April 17*	Sept. 29	Olin	April 22	Sept. 26
Alton	May 14	Sept. 26	Fayette	May 14	Sept. 26	Omaha, Neb.	April 1*	Oct. 22
Amana	April 20	Sept. 26	Forest City	April 27*	Sept. 26	Onawa	April 18	Sept. 30
Ames	April 27*	Sept. 26	Fort Dodge	April 27*	Sept. 26	Osage	April 27*	Sept. 26
Atlantic	May 17*	Sept. 26	Fort Madison		Sept. 26	Oskaloosa	April 20*	Sept. 26
Audubon	April 7	Sept. 26	Grand Meadow	April 27	Sept. 26	Ottumwa	April 19*	Sept. 27
Baxter	April 27	Sept. 26	Greenfield	April 19*	Sept. 26	Pacific Junction	May 17*	Sept. 26
Bedford	May 17	Sept. 26	Grinnell	April 8*	Sept. 26	Pella	April 20*	Sept. 26
Belle Plaine	April 23*	Sept. 26	Grundy Center	April 27*	Sept. 26	Perry	April 7*	Sept. 26
Belmond	May 17	Sept. 26	Guthrie Center	April 27*	Sept. 26	Pocahontas	April 27*	Sept. 25
Bloomfield		Sept. 26	Hampton	April 27*	Sept. 26	Ridgeway	April 7	Sept. 26
Bonaparte	April 19*	Sept. 26	Harlan	May 14*	Sept. 26	Rock Rapids	May 16*	Sept. 26
Boone	April 27	Sept. 29	Humboldt		Sept. 26	Rockwell City	April 25*	Oct. 20*
Britt	May 14	Sept. 26	Independence	May 14*	Sept. 26	Sac City	April 27*	Sept. 26
Buckingham		Sept. 26	Indianola	April 3	Sept. 26	Saint Charles	April 8*	Oct. 22*
Burlington	April 19*	Sept. 26	Inwood	May 16*	Sept. 26	Sheldon	May 16	Sept. 27
Carroll	May 14*	Sept. 26	Iowa City	April 19	Oct. 23	Sibley	May 14*	Sept. 25*
Cedar Rapids	April 20	Sept. 26	Iowa Falls	May 14	Sept. 26	Sigourney	April 19*	Sept. 26
Centerville	April 19*	Sept. 26	Jefferson	April 27*	Sept. 26	Sioux Center	April 27*	Sept. 26
Chariton	April 19	Sept. 26	Keokuk	April 3	Oct. 23	Sioux City	April 7	Sept. 30
Charles City	May 14	Sept. 26	Keosauqua	April 19*	Sept. 26	Spencer	April 26*	Sept. 25*
Clarinda	April 23*	Sept. 26	Knoxville	April 19*	Sept. 26	Stockport	April 20*	Sept. 26
Clear Lake	April 7*	Oct. 30*	Lacona		Sept. 27	Storm Lake	April 27	Sept. 27
Clinton		Sept. 29	Lake Park		Sept. 26	Thurman	May 17*	Sept. 26*
Columbus Junction	April 19	Oct. 23	Lamoni	April 19*	Sept. 26	Tipton	April 19*	Oct. 23*
Corning	April 20	Sept. 26	Larrabee	May 17	Sept. 26	Toledo	April 27*	Sept. 26
Corydon	April 19*	Sept. 26	Le Mars	April 27*	Sept. 27	Wapello	April 20*	Sept. 26
Council Bluffs	May 17	Sept. 27	Lenox	April 7*	Sept. 26	Washington	April 19*	Sept. 26
Creston	April 18	Sept. 26	Leon	April 19	Sept. 26	Washta	April 23*	Sept. 26
Cumberland		Sept. 29	Little Sioux	May 14	Oct. 12	Waterloo	April 27*	Sept. 26
Davenport	April 3*	Oct. 23	Logan	April 27*	Sept. 26*	Waukee	April 27	Sept. 26
Decorah	May 17*	Sept. 26	Marshalltown	April 19	Sept. 26	Waverly	May 13*	Sept. 26*
Delaware	April 27*	Sept. 26	Mason City	April 27*	Sept. 26	Webster City		Sept. 26*
Denison	May 17*	Sept. 26	Monroe	April 27	Sept. 26	West Bend	April 27	Sept. 26
Des Moines	April 3*	Sept. 26	Mount Ayr	April 16*	Sept. 26	Whitten	April 27	Sept. 26
Dubuque	April 19	Oct. 23	Mount Pleasant	May 13*	Sept. 26	Winterset	April 19*	Sept. 26*

*Date of last temperature of 32 degrees or lower in spring, or first temperature of 32 degrees or lower in autumn, as the case may be, when frost was not recorded.

PART II

STATISTICAL TABLES

OF

IOWA'S PRINCIPAL FARM CROPS

CORN CROPS—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	41	230,633,200	$ .25	$ 57,658,300	5,625,200
1885	33	224,636,522	.23	51,666,400	6,803,834
1890	28	239,675,156	.41	98,266,814	8,550,827

CORN CROPS—1896-1912.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Y	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	39	312,692,210	$ .14	$ 43,916,900	8,043,390
1897	29	239,452,150	.17	40,706,860	8,253,522
1898	34.5	289,214,850	.23	66,519,400	8,396,286
1899	36.3	306,852,710	.23	70,429,410	8,460,521
1900	40.3	345,055,040	.27	93,164,860	8,618,660
1901	26.2	227,908,850	.50	113,954,000	8,687,480
1902	34	296,950,230	.28	83,432,700	8,700,000
1903	31	230,511,310	.36	82,984,071	7,398,320
1904	36	323,853,330	.35	113,348,665	9,000,000
1905	37.2	345,871,840	.35	121,055,144	9,285,150
1906	41	388,836,252	.33	128,155,143	9,443,960
1907	29.6	246,898,460	.44	108,635,322	8,858,000
1908	35.9	301,873,150	.51	153,955,306	8,399,610
1909	34.6	308,036,868	.51	157,098,802	8,681,850
1910	39.8	334,374,428	.36	120,374,794	8,399,712
1911	32.9	281,366,600	.54	151,937,964	8,534,500
1912	45.8	421,368,400	.36	151,698,624	9,199,610
Average 17 years	35.5	305,948,040	$ .35	105,962,821	8,609,445

OATS—1880, 1885, 1890

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	35	42,288,800	$ .23	$ 9,496,424	1,179,680
1885	32.5	71,737,900	.21	15,064,959	2,207,320
1890	29	80,002,735	.38	30,401,039	2,758,715

OATS—1896-1912.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	26	73,450,000	$ .12	$ 8,814,000	2,825,000
1897	30	132,517,150	.16	21,211,380	4,405,782
1898	32	139,915,340	.21	29,383,220	4,299,243
1899	34.5	140,647,300	.19	26,722,980	4,069,557
1900	35	138,832,300	.20	27,766,460	3,991,690
*1901	32	114,883,000	.35	40,209,230	3,799,220
1902	31	92,907,900	.24	22,297,000	3,770,624
†1903	25.9	99,012,660	.30	29,703,798	3,822,822
1904	29.4	118,435,570	.26	30,793,284	4,018,980
1905	33.8	146,439,240	.25	36,609,810	4,177,545
1906	34	142,036,530	.27	38,349,878	4,166,800
1907	24.5	111,190,400	.39	43,364,256	4,536,170
1908	25.5	112,830,490	.43	48,517,110	4.431,650
1909	27	117,083,850	.35	40,979,348	4,312,134
1910	36	169,207,098	.27	45,685,916	4,697,749
1911	25.7	120,208,300	.41	59,285,403	4,660.500
1912	44.4	206,949,700	.27	55,876,419	4,665,100
Average 17 years	31.0	128,032,166	$ .27	$ 35,621,735	4,155,916

*Short corn crop.
†Excessive moisture.

WHEAT—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre spring whea	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st	Total farm value December 1st	Acreage
1880 ------------	10.5	------	------------	------------	36,099,760	$.82	$29,501,803	3,437,948
1885 ------------	12	------	------------	------------	31,776,108	.61	19,383,426	2,648,009
1890 ------------	11.7	------	------------	------------	25,114,552	.78	19,589,350	2,092,896

WHEAT—1896-1912.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre spring wheat	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st	Total farm value December 1st	Acreage
1896 ------------	13	17	7,047,235	3,351,550	10,398,785	$.57	$ 6,020,000	739,245
1897 ------------	13.4	13	12,941,600	1,671,454	14,613,054	.74	10,813,650	1,222,974
1898 ------------	14.8	16.5	19,152,352	3,168,916	22,321,268	.53	11,602,000	1,484,682
1899 ------------	12.7	11	19,574,792	226,040	19,900,830	.58	10,701,490	1,559,931
1900 ------------	14.3	13.3	20,280,280	1,018,070	21,288,350	.60	12,799,370	1,492,630
1901 ------------	15.3	17.6	17,429,230	865,770	18,295,000	.60	10,965,000	1,188,239
1902 ------------	13	18	12,680,800	825,045	13,532,845	.53	7,062,640	1,021,281
1903 ------------	12.6	16.9	9,481,350	1,435,380	10,916,730	.67	7,167,643	837,422
1904 ------------	9.1	14.3	7,080,430	1,017,000	8,097,430	.89	7,044,809	846,070
1905 ------------	14.4	20.2	5,155,760	1,253,020	6,408,780	.72	4,614,321	420,068
1906 ------------	15	23	5,603,880	1,566,050	7,169,930	.64	4,579,697	443,810
1907 ------------	13	19.8	4,402,320	1,698,101	6,100,421	.82	4,974,302	424,407
1908 ------------	15.4	19.7	4,968,250	1,678,540	6,646,790	.86	5,716,239	408,614
1909 ------------	12.5	18.2	3,809,460	3,621,953	7,431,413	.90	6,688,272	502,762
1910 ------------	19.3	18.5	6,773,799	3,635,405	10,409,204	.86	8,951,915	546,179
1911 ------------	13.1	19.7	4,674,500	3,959,000	8,633,500	.89	7,683,715	559,272
1912 ------------	18.7	24.3	9,486,700	8,133,530	17,620,230	.77	13,554,135	840,360
Av. 17 yrs--	14.1	17.7	10,031,926	2,301,460	12,340,268	$.72	$ 8,290,541	855,173

BARLEY—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	23	4,600,000	$ .42	$ 1,932,000	200,000
1885	27	5,737,095	.33	1,893,241	212,485
1890	24	3,664,368	.47	1,722,254	152,682

BARLEY—1896-1912.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	29	15,881,618	$ .20	$ 3,176,320	547,642
1897	25	14,076,850	.23	3,237,670	551,867
1898	27.5	14,138,000	.30	4,209,740	509,580
1899	25.6	14,719,310	.30	4,415,570	557,598
1900	25.3	12,695,200	.33	4,189,410	501,740
1901	24.2	14,654,410	.44	6,447,940	604,610
1902	25	15,380,910	.33	5,075,710	594,070
1903	24.7	12,179,790	.37	4,506,522	493,108
1904	25	12,317,710	.34	4,188,021	493,370
1905	27.5	15,566,770	.33	5,137,034	565,700
1906	26.5	14,858,830	.36	5,349,178	558,870
1907	24.6	9,893,330	.60	5,935,998	397,210
1908	26.7	10,629,660	.50	5,314,830	307,408
1909	17.5	10,352,040	.46	4,761,938	562,622
1910	25.9	8,614,541	.56	4,824,143	324,571
1911	22.9	7,197,090	.90	6,477,381	313,147
1912	32.5	9,587,760	.50	4,793,880	294,935
Average 17 years	25.6	12,514,342	$ .41	$ 4,825,958	481,062

RYE—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	14	574,000	$ .38	$ 218,120	41,000
1885	15	1,710,000	.42	718,200	114,000
1890	16	1,608,960	.51	820,570	100,560

RYE—1896-1912.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	16	1,891,716	$ .25	$ 486,680	121,670
1897	15	3,490,344	.34	1,186,710	226,198
1898	16	3,370,550	.38	1,280,800	210,309
1899	16.3	2,061,160	.40	824,460	126,236
1900	15.6	1,621,130	.43	697,300	103,680
1901	15.8	859,630	.48	859,630	54,390
1902	17	882,830	.40	353,132	55,150
1903	15.6	1,923,060	.44	846,146	123,273
1904	15	1,517,090	.54	819,228	99,500
1905	18	1,283,500	.52	667,420	71,305
1906	17.5	1,093,160	.48	520,719	62,530
1907	17	900,060	.61	549,036	52,975
1908	17.1	869,072	.63	547,515	50,893
1909	13.4	556,846	.60	334,107	41,606
1910	13.8	407,058	.61	248,305	29,502
1911	16.8	486,130	.79	384,043	28,710
1912	20.7	888,530	.61	542,003	42,970
Average 17 years	16.3	1,417,751	$ .50	$ 655,720	88,288

HAY—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
*1880 ----------	----	------------	------	------------	------------	------	------	------------	----------
*1885 ----------	----	------------	------	------------	------------	------	------	------------	----------
1890 ----------	1.5	4,991,335	------	------------	------------	$6.84	------	$34,140,731	3,327,557

*No authentic data obtainable.

HAY—1896-1912.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
1896 ----------	1.5	3,376,440	1.5	2,325,000	5,701,440	$4.50	$3.30	$22,782,000	3,800,960
1897 ----------	1.6	3,362,287	1.3	1,939,117	5,301,320	4.50	3.70	22,304,000	3,315,972
1898 ----------	1.7	3,852,561	1.2	1,645,419	5,498,080	4.30	3.50	22,281,000	4,104,967
1899 ----------	1.5	4,852,941	1.2	1,458,195	5,311,130	5.75	4.90	29,350,000	3,742,655
1900 ----------	1.4	3,609,010	1.	1,530,050	5,139,060	6.50	5.00	31,120,000	4,078,960
1901 ----------	1.4	3,711,680	1.2	1,268,700	4,980,380	8.25	6.30	38,712,000	3,608,450
1902 ----------	1.8	4,439,040	1.3	1,202,860	5,641,900	6.80	5.50	36,787,322	3,391,408
1903 ----------	1.9	5,216,404	1.3	1,191,345	6,407,749	5.75	4.95	35,891,480	3,651,894
1904 ----------	1.5	4,499,090	1.2	1,091,590	5,590,680	5.62	4.50	30,197,040	3,707,298
1905 ----------	1.8	6,477,300	1.2	1,313,310	7,790,610	5.50	4.50	41,535,045	4,692,925
1906 ----------	1.3	4,892,950	1.2	1,110,690	6,003,640	7.50	5.50	42,805,920	4,418,600
1907 ----------	1.5	5,117,878	1.3	1,172,590	6,290,468	8.50	6.75	51,316,945	4,268,730
1908 ----------	1.8	5,838,640	1.6	1,445,989	7,284,620	6.16	5.09	43,326,060	4,146,870
1909 ----------	1.7	5,828,580	1.4	1,219,630	7,048,210	7.42	5.90	50,443,781	4,299,740
1910 ----------	1.1	3,876,844	1.1	807,280	4,684,124	10.15	8.00	45,808,207	4,367,725
1911 ----------	0.8	3,246,200	0.9	683,385	3,929,585	13.44	10.28	50,653,116	4,214,540
1912 ----------	1.6	4,287,600	1.4	1,085,440	5,373,040	9.89	7.43	50,469,183	3,682,359
Av. 17 yrs.	1.5	4,440,320	1.3	1,322,976	5,763,296	$7.09	$5.59	$37,987,241	3,970,238

FLAX—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	10	1,034,200	$ 1.00	$ 1,034,200	103,420
*1885			.94	2,503,293	
1890	10.5	2,929,081	1.10	3,276,989	283,722

*No other data.

FLAX—1896-1912.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	9.5	1,946,720	$ .95	$ 1,135,000	199,128
1897	10	2,498,600	.87	2,173,782	249,882
1898	10.5	2,376,600	.80	1,901,280	225,014
1899	11.2	1,597,790	1.04	1,661,898	142,175
1900	11.7	1,222,980	1.50	1,834,470	108,850
1901	18.8	916,890	1.29	916,890	104,140
1902	8	755,350	1.00	725,350	94,767
1903	8.7	355,160	.78	277,024	40,823
1904	11	591,140	1.15	679,811	51,370
1905	9.8	173,770	.90	156,393	17,732
1906	10.7	205,280	.97	200,091	19,160
1907	10.8	461,960	.98	408,640	42,790
1908	11.3	461,580	1.01	466,195	40,833
1909	10	173,650	1.29	223,647	17,365
1910	8.6	170,387	2.28	388,482	19,821
1911	8.5	173,710	2.00	347,420	20,205
1912	11.3	423,060	1.31	554,208	37,305
Average 17 years	10.6	826,039	$ 1.18	$ 822,975	84,198

POTATOES—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	95	10,165,000	$ .35	$ 3,557,750	107,000
1885	82	12,874,000	.40	5,149,600	157,000
1890	49	8,332,352	.81	6,749,205	170,048

POTATOES—1896-1912.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	87	14,814,795	$ .21	$ 2,962,950	170,285
1897	60	10,051,910	.45	4,523,360	163,248
1898	76	12,538,410	.31	3,826,900	164,456
1899	98	15,252,934	.24	3,660,714	154,243
1900	78	10,850,900	.40	4,340,360	149,680
*1901	37.4	5,098,460	.90	4,588,610	136,300
1902	91	12,051,670	.34	4,095,650	138,484
†1903	53.8	6,082,694	.75	4,562,020	113,433
1904	125	14,255,680	.28	3,991,590	113,250
1905	84	9,352,190	.50	4,676,045	111,335
1906	101	11,697,500	.48	5,614,800	115,310
1907	84	9,847,430	.62	6,105,406	117,350
1908	89.9	10,658,290	.59	6,288,391	118,517
1909	90	12,427,595	.53	6,586,625	138,139
1910	75.3	9,986,881	.58	5,792,391	132,640
1911	71	9,386,390	.71	8,353,887	132,865
1912	104	12,904,500	.44	5,677,980	124,030
Average 17 years	82.7	11,015,190	$ .49	$ 5,038,100	134,916

*Very dry.
†Very wet.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES.

Figures taken from the December, 1912, Supplement of the Crop Reporter issued by the United States Department of Agriculture.

CORN.

States	Acreage, in thousands (000 omitted)				Yield, per acre				Production, in thousands (000 omitted)				Price paid farmers Dec. 1				Val. on basis of prices paid farmers Dec. 1, in thousands (000 omitted)			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
Maine	16	18	17	15	40.0	44.0	46.0	42.7	640	792	782	649	75	90	71	80	480	713	555	519
New Hampshire	23	23	22	20	46.0	45.0	46.0	46.2	1,058	1,035	1,012	916	75	82	69	76	794	849	698	696
Vermont	45	46	44	43	40.0	41.0	43.0	40.0	1,800	1,886	1,892	1,715	72	80	66	73	1,296	1,509	1,249	1,252
Massachusetts	47	47	45	42	45.0	44.0	45.5	48.6	2,115	2,068	2,048	2,029	77	83	70	81	1,629	1,716	1,434	1,644
Rhode Island	11	11	10	10	41.5	45.0	40.0	41.1	456	495	400	398	88	95	83	97	401	470	332	386
Connecticut	60	59	57	53	50.0	48.5	53.2	48.0	3,000	2,862	3,032	2,531	77	83	68	75	2,310	2,375	2,062	1,898
New York	512	530	525	512	38.6	38.5	38.3	35.4	19,763	20,405	20,108	18,116	70	77	63	74	13,834	15,712	12,668	13,406
New Jersey	273	270	267	265	38.0	36.8	36.0	37.7	10,374	9,936	9,612	10,001	68	71	60	71	7,054	7,055	5,767	7,101
Pennsylvania	1,449	1,435	1,430	1,381	42.5	44.5	41.0	30.1	61,582	63,858	58,630	41,494	63	68	59	70	38,797	43,423	34,592	29,046
Delaware	195	195	193	189	34.0	34.0	31.8	25.6	6,630	6,630	6,137	4,840	51	61	52	58	3,381	4,044	3,191	2,807
Maryland	670	670	660	647	36.5	36.5	33.5	27.7	24,455	24,455	22,110	17,924	55	63	58	65	13,450	15,407	12,824	11,651
Virginia	1,980	1,980	1,960	1,860	24.0	24.0	25.5	20.6	47,520	47,520	49,980	38,295	71	73	65	74	33,739	34,690	32,487	28,338
West Virginia	725	707	700	676	33.8	25.7	26.0	25.3	24,505	18,170	18,200	17,119	65	77	68	74	15,928	13,991	12,376	12,668
No. Carolina	2,808	2,700	2,650	2,459	18.2	18.4	18.6	13.9	51,106	49,680	49,290	34,063	83	82	76	85	42,418	40,738	37,460	28,954
So. Carolina	1,915	1,790	1,707	1,566	17.9	18.2	18.5	13.3	34,278	32,578	31,580	20,872	85	91	82	90	29,136	29,646	25,896	18,785
Georgia	3,910	3,692	3,585	3,383	13.8	16.0	14.5	11.6	53,958	59,072	51,982	39,375	85	83	78	86	45,864	49,030	40,546	33,862
Florida	655	636	630	606	13.0	14.6	13.0	11.3	8,515	9,286	8,190	7,024	79	80	85	83	6,727	7,429	6,962	5,830
Ohio	4,075	3,900	3,960	3,916	42.8	38.6	36.5	40.2	174,410	150,540	144,540	157,513	45	58	46	56	78,484	87,313	66,488	88,207
Indiana	4,947	4,850	4,800	4,901	40.3	36.0	39.3	39.9	199,364	174,600	188,640	195,496	42	54	40	50	83,733	94,284	75,456	97,748
Illinois	10,658	10,150	10,250	10,046	40.0	33.0	39.1	38.8	426,320	334,950	400,775	390,219	41	55	38	52	174,791	184,222	152,294	202,914
Michigan	1,625	1,690	1,670	1,590	34.0	33.0	32.4	33.3	55,250	55,770	54,108	52,907	57	65	53	61	31,492	36,250	28,677	32,273
Wisconsin	1,632	1,600	1,520	1,458	35.7	36.3	32.5	33.7	58,262	58,080	49,400	49,163	51	60	52	60	29,714	34,848	25,688	29,498
Minnesota	2,266	2,200	2,040	2,004	34.5	33.7	32.7	33.8	78,177	74,140	66,708	67,897	37	53	45	49	28,925	39,294	30,019	33,270
†Iowa	10,047	9,850	9,470	9,229	43.0	31.0	36.3	37.0	432,021	305,350	343,761	341,750	35	53	36	49	151,207	161,836	123,754	167,458
Missouri	7,622	7,400	7,500	7,114	32.0	26.0	33.0	26.9	243,904	192,400	247,500	191,427	46	60	44	59	112,196	115,440	108,900	112,942

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES.

CORN—Continued.

States	Acreage, in thousands (000 omitted)				Yield, per acre				Production, in thousands (000 omitted)				Price paid farmers Dec. 1				Val. on basis of prices paid farmers Dec. 1, in thousands (000 omitted)			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
North Dakota	328	290	210	185	26.7	25.0	14.0	26.7	8,758	7,250	2,940	4,941	43	60	58	55	3,766	4,350	1,705	2,718
South Dakota	2,495	2,310	2,100	2,038	30.6	22.0	25.0	27.3	76,347	50,820	52,500	55,559	37	53	40	50	28,248	26,935	21,000	27,779
Nebraska	7,609	7,425	7,425	7,266	24.0	21.0	25.8	24.8	182,616	155,925	191,565	180,133	37	55	36	50	67,568	85,759	68,963	90,066
Kansas	7,575	8,700	8,950	8,109	23.0	14.5	19.0	19.1	174,225	126,150	170,050	154,652	40	63	45	54	69,690	79,474	76,522	83,512
Kentucky	3,600	3,600	3,500	3,436	30.4	26.0	29.0	24.3	109,440	93,600	101,500	83,348	55	63	53	62	60,192	58,968	53,795	51,676
Tennessee	3,332	3,400	3,400	3,146	26.5	26.8	25.9	21.5	88,298	91,120	88,060	67,682	61	61	56	70	53,862	55,583	49,314	47,378
Alabama	3,150	3,000	2,850	2,573	17.2	18.0	18.0	11.9	54,180	54,000	51,300	30,696	79	78	71	85	42,802	42,120	36,423	26,091
Mississippi	3,106	2,850	2,590	2,173	18.3	19.0	20.5	13.1	56,840	54,150	53,095	28,429	71	72	63	81	40,356	38,988	33,450	23,027
Louisiana	1,805	1,800	1,782	1,591	18.0	18.5	23.6	16.3	32,490	33,300	42,055	26,010	68	70	55	69	22,093	23,310	23,130	17,947
Texas	7,300	7,300	6,800	5,130	21.0	9.5	20.6	14.7	153,300	69,350	140,080	75,499	64	80	63	76	98,112	55,480	88,250	57,379
Oklahoma	5,448	5,675	5,735	5,914	18.7	6.5	16.0	15.9	101,878	36,888	91,760	94,283	41	70	51	55	41,770	25,822	46,798	51,856
Arkansas	2,475	2,390	2,390	2,277	20.4	20.8	24.0	16.5	50,490	49,712	57,360	37,610	67	72	58	72	33,828	35,793	33,269	27,079
Montana	24	20	16	10	25.5	26.5	23.0	28.8	612	530	368	274	70	80	95	86	428	424	350	236
Wyoming	16	13	11	9	23.0	15.0	10.0	19.1	368	195	110	176	64	76	66	78	236	148	73	138
Colorado	420	373	346	327	20.8	14.0	19.9	15.0	8,736	5,222	6,885	4,903	50	78	60	70	4,368	4,073	4,131	4,432
New Mexico	93	94	89	86	22.4	24.7	23.0	13.5	2,083	2,322	2,047	1,165	75	84	90	90	1,562	1,950	1,842	1,048
Arizona	16	15	15	16	33.0	33.0	32.5	19.1	528	495	488	299	100	97	110	100	528	480	537	299
Utah	9	8	7	7	30.0	35.0	30.3	22.3	270	280	212	170	75	81	84	87	202	227	178	148
Nevada	1	1	1	1	30.0	30.5	30.0	35.5	30	30	30	21	98	90	100	87	29	27	30	18
Idaho	12	11	10	9	32.8	30.0	32.0	34.6	394	330	320	318	70	85	71	75	276	280	227	239
Washington	31	30	28	26	27.3	28.5	28.0	21.7	846	855	784	563	77	79	75	86	651	675	588	484
Oregon	20	20	18	17	31.5	28.5	25.5	26.1	630	570	459	452	75	80	80	80	472	456	367	361
California	52	51	50	52	37.0	36.0	37.5	24.5	1,921	1,836	1,875	1,274	85	90	80	91	1,635	1,652	1,500	1,159
United States	107,083	105,825	104,035	98,383	29.2	23.9	27.7	25.9	3,124,746	2,531,488	2,886,260	2,552,190	48.7	61.8	48.0	57.9	1,520,454	1,565,258	1,384,817	1,477,223

*Census.

†Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES 1909, 1910, 1911 AND 1912, BY STATES—Continued.

WINTER WHEAT.

tates	Acreage, in thousands (000 omitted)				Yield, per acre				Production, in thousands (000 omitted)				Price paid farmers Dec. 1				Val. on basis of prices paid farmers Dec. 1, in thousands (000 omitted)			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
New York	335	345	355	289	16.0	19.5	23.7	23.1	5,360	6,728	8,414	6,664	99	95	96	111	5,306	6,392	8,077	7,397
New Jersey	79	84	84	84	18.5	17.4	18.5	17.7	1,462	1,462	1,554	1,489	98	96	98	109	1,433	1,404	1,523	1,623
Pennsylvania	1,240	1,289	1,309	1,226	18.0	13.5	17.8	17.6	22,320	17,402	23,300	21,564	95	92	92	109	21,204	16,010	21,436	23,505
Delaware	111	113	116	111	17.5	16.7	17.0	14.8	1,942	1,887	1,972	1,644	96	90	90	104	1,864	1,698	1,775	1,710
Maryland	599	605	604	590	15.0	15.5	17.4	16.0	8,985	9,378	10,510	9,463	95	91	92	110	8,536	8,534	9,669	10,409
Virginia	741	750	748	693	11.6	12.0	12.8	11.7	8,596	9,000	9,574	8,077	101	96	97	115	8,682	8,640	9,287	9,289
West Virginia	233	238	241	209	14.5	11.5	12.5	12.3	3,378	2,737	3,012	2,576	101	102	102	113	3,412	2,792	3,072	2,911
North Carolina	598	626	598	502	8.9	10.6	11.4	7.6	5,322	6,636	6,817	3,827	111	102	110	127	5,907	6,769	7,499	4,860
South Carolina	79	83	77	43	9.2	11.4	11.0	7.2	727	946	847	311	119	123	126	146	865	1,164	1,067	454
Georgia	132	145	141	93	9.3	12.0	10.5	8.1	1,228	1,740	1,480	753	122	114	130	145	1,498	1,984	1,924	1,092
Ohio	1,220	2,265	2,125	1,828	8.0	16.0	16.2	16.8	9,760	36,240	34,425	30,664	98	91	90	112	9,565	32,978	30,982	34,344
Indiana	1,260	2,337	2,256	2,083	8.0	14.7	15.6	16.3	10,080	34,354	35,194	33,936	93	89	87	110	9,374	30,575	30,619	37,330
Illinois	1,183	2,625	2,444	2,185	8.3	16.0	15.0	17.3	9,819	42,000	36,660	37,831	88	89	88	104	8,641	37,380	32,261	39,344
Michigan	700	1,025	936	802	10.0	18.0	18.0	20.0	7,000	18,450	16,848	16,026	96	88	89	112	6,720	16,236	14,995	17,949
Wisconsin	87	90	86	62	19.5	17.5	20.0	19.6	1,696	1,575	1,720	1,216	83	90	92	96	1,408	1,418	1,582	1,167
‡Iowa	300	287	187	237	23.0	19.7	21.2	18.2	6,900	5,654	3,964	4,311	78	88	85	93	5,382	4,976	3,369	4,009
Missouri	1,900	2,300	1,881	2,017	12.5	15.7	13.8	14.8	23,750	36,110	25,958	29,837	90	88	87	105	21,375	31,777	22,583	31,329
Nebraska	2,825	2,788	2,109	2,430	18.0	13.8	16.5	18.4	50,850	38,474	34,798	44,713	69	87	80	89	35,086	33,472	27,838	39,795
Kansas	5,900	4,725	4,400	5,908	15.5	10.8	14.2	13.0	91,450	51,030	62,480	76,907	74	91	84	96	67,673	46,437	52,483	73,831
Kentucky	686	780	767	681	10.0	12.7	12.8	12.8	6,860	9,906	9,818	8,739	99	92	93	111	6,791	9,114	9,131	9,700
Tennessee	674	720	711	620	10.5	11.5	11.7	10.5	7,077	8,280	8,319	6,516	100	96	98	115	7,077	7,949	8,153	7,493
Alabama	30	30	28	14	10.6	11.5	12.0	8.1	318	345	346	114	113	120	113	130	359	414	386	148
Mississippi	8	9	5	†	12.0	12.0	14.0	11.9	96	108	70	5	97	100	116	121	93	108	81	6
Texas	735	700	700	326	15.0	9.4	15.0	7.9	11,025	6,580	10,500	2,561	93	100	98	118	10,253	6,580	10,290	3,022
Oklahoma	1,570	1,122	1,567	1,169	12.8	8.0	16.3	12.0	20,096	8,976	25,542	14,008	75	92	87	101	15,072	8,258	22,222	14,148

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

WINTER WHEAT—Continued.

States	Acreage, in thousands (000 omitted)				Yield, per acre				Production, in thousands (000 omitted)				Price paid farmers Dec. 1				Val. on basis of prices paid farmers Dec. 1, in thousands (000 omitted)‡			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
Arkansas	94	96	87	61	10.0	10.5	13.9	8.6	940	1,008	1,209	526	94	90	94	110	884	907	1,136	579
Montana	475	229	170	129	24.5	31.7	22.0	25.2	11,638	7,259	3,740	3,255	64	77	86	87	7,448	5,589	3,216	2,832
Wyoming	32	24	21	13	28.0	26.0	25.0	17.2	896	624	525	224	80	94	95	99	717	587	499	222
Colorado	193	178	153	127	24.5	18.0	23.0	24.7	4,728	3,204	3,519	3,137	73	84	82	93	3,451	2,691	2,886	2,917
New Mexico	33	30	20	12	20.0	25.0	20.0	15.6	660	750	400	187	90	100	100	117	594	750	400	219
Arizona	21	25	25	18	31.0	30.0	22.3	18.0	651	750	558	324	110	95	120	139	716	712	670	450
Utah	160	150	133	120	24.0	20.0	20.5	19.9	3,840	3,000	2,726	2,389	75	70	84	90	2,880	2,100	2,290	2,150
Nevada	15	16	15	3	27.5	23.0	24.0	25.0	412	368	600	75	100	95	109	104	412	350	392	78
Idaho	335	347	312	251	28.7	31.5	23.7	26.2	9,614	10,930	7,394	6,570	66	66	72	87	6,345	7,214	5,324	5,716
Washington	988	920	851	982	27.6	27.3	20.5	21.2	27,269	25,116	17,446	20,816	68	71	78	93	18,543	17,832	13,608	19,359
Oregon	630	586	517	621	26.8	22.2	23.7	16.6	16,884	13,009	12,253	10,323	72	75	84	93	12,156	9,757	10,293	9,600
California	370	480	550	478	17.0	18.0	18.0	13.0	6,290	8,640	9,900	6,203	93	88	94	111	5,850	7,603	9,306	6,885
United States	26,571	29,162	27,329	27,017	15.1	14.8	15.9	15.5	399,919	430,656	434,142	417,781	80.9	88.0	88.1	102.4	323,572	379,151	382,318	427,872

*Census.

†Less than 1,000 acres.

‡Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

SPRING WHEAT.

States	Acreage, in thousands (000 omitted)				Yield, per acre				Production, in thousands (000 omitted)				Price paid farmers Dec. 1				Val. on basis of prices paid farmers Dec. 1, in thousands (000 omitted)			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
Maine	3	3	3	3	23.5	21.0	29.7	28.3	70	63	89	85	103	110	102	110	72	69	91	94
Vermont	1	1	1	1	25.0	27.8	29.3	14.0	25	28	29	14	98	99	103	120	24	28	30	17
Wisconsin	101	105	100	78	18.5	14.5	18.7	18.2	1,868	1,522	1,870	1,419	83	90	92	96	1,550	1,370	1,720	1,362
Minnesota	4,325	4,350	4,000	3,277	15.5	10.1	16.0	17.4	67,038	43,935	64,000	57,094	73	92	94	96	48,938	40,420	60,160	54,810
†Iowa	350	360	345	290	17.0	13.8	20.9	12.9	5,950	4,968	7,210	3,745	78	88	85	93	4,641	4,372	6,128	3,483
North Dakota	7,990	9,150	7,700	8,189	18.0	8.0	5.0	14.3	143,820	73,200	38,500	116,782	69	89	90	92	99,236	65,148	34,650	107,439
South Dakota	3,675	3,700	3,650	3,217	14.2	4.0	12.8	14.6	52,185	14,800	46,720	47,060	69	91	89	90	36,008	13,468	41,581	42,354
Nebraska	298	310	285	233	14.1	10.0	13.9	12.8	4,202	3,100	3,962	2,973	69	87	80	89	2,899	2,697	3,170	3,646
Kansas	56	85	90	66	15.0	4.2	8.4	10.2	840	357	756	670	74	91	84	96	622	325	635	643
Montana	328	200	180	129	23.5	25.2	22.0	23.2	7,708	5,040	3,960	2,997	64	77	86	87	4,933	3,881	3,406	2,607
Wyoming	44	45	35	29	29.2	26.0	25.0	17.8	1,285	1,170	875	515	80	94	95	99	1,028	1,100	831	510
Colorado	260	260	250	214	24.0	19.5	21.9	19.1	6,240	5,070	5,475	4,087	73	84	82	93	4,555	4,259	4,490	3,801
New Mexico	26	25	21	20	22.0	20.5	20.0	15.6	572	512	420	313	90	100	100	117	515	512	420	366
Arizona	2	2	2	2	28.0	25.0	22.3	19.5	56	50	45	39	110	95	120	139	62	48	54	54
Utah	76	75	65	58	29.2	27.0	25.3	26.8	2,219	2,025	1,644	1,555	75	70	84	90	1,664	1,418	1,381	1,400
Nevada	24	20	15	11	30.2	32.5	29.0	28.6	725	650	435	315	100	95	109	104	725	618	474	328
Idaho	175	170	160	148	28.3	29.0	20.4	24.8	4,952	4,930	3,264	3,668	66	66	72	87	3,268	3,254	2,350	3,191
Washington	1,297	1,310	1,250	1,136	20.4	19.5	14.5	17.7	26,459	25,545	18,125	20,104	68	71	78	93	17,992	18,137	14,138	18,697
Oregon	212	210	200	142	19.5	17.7	18.0	15.0	4,134	3,717	3,600	2,134	72	75	84	93	2,976	2,788	3,024	1,985
United States	19,243	20,381	18,352	17,243	17.2	9.4	11.0	15.4	330,348	190,682	200,979	265,569	70.1	86.0	88.9	92.6	231,708	163,912	178,733	245,787

*Census.

†Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

ALL WHEAT.

States	Acreage, in thousands (000 omitted)				Yield, per acre				Production, in thousands (000 omitted)				Price paid farmers Dec. 1				Val. on basis of prices paid farmers Dec. 1, in thousands (000 omitted)			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
Maine	3	3	3	3	23.5	21.0	29.7	28.3	70	63	89	85	103	110	102	110	72	69	91	94
Vermont	1	1	1	1	25.0	27.8	29.3	14.0	25	28	29	14	98	99	103	120	24	28	30	17
New York	335	345	355	289	16.0	19.5	23.7	23.1	5,360	6,728	8,414	6,664	99	95	96	111	5,306	6,392	8,077	7,397
New Jersey	79	84	84	84	18.5	17.4	18.5	17.7	1,462	1,462	1,554	1,489	98	96	98	109	1,433	1,404	1,523	1,623
Pennsylvania	1,240	1,289	1,309	1,226	18.0	13.5	17.8	17.6	22,320	17,402	23,300	21,561	95	92	92	109	21,204	16,010	21,436	23,505
Delaware	111	113	116	111	17.5	16.7	17.0	14.8	1,942	1,887	1,972	1,644	96	90	90	104	1,864	1,698	1,775	1,709
Maryland	599	605	604	590	15.0	15.5	17.4	16.0	8,985	9,378	10,510	9,463	95	91	92	110	8,536	8,534	9,669	10,410
Virginia	741	750	748	693	11.6	12.0	12.8	11.7	8,596	9,000	9,574	8,077	101	96	97	115	8,682	8,640	9,287	9,289
West Virginia	233	238	241	209	14.5	11.5	12.5	12.3	3,378	2,737	3,012	2,576	101	102	102	113	3,412	2,792	3,072	2,911
North Carolina	598	626	598	502	8.9	10.6	11.4	7.6	5,322	6,636	6,817	3,827	111	102	110	127	5,907	6,769	7,499	4,860
South Carolina	79	83	77	43	9.2	11.4	11.0	7.2	727	946	847	311	119	123	126	146	865	1,164	1,067	453
Georgia	132	145	141	93	9.3	12.0	10.5	8.1	1,228	1,740	1,480	753	122	114	130	145	1,498	1,984	1,924	1,092
Ohio	1,220	2,265	2,125	1,828	8.0	16.0	16.2	16.8	9,760	36,240	34,425	30,664	98	91	90	112	9,565	32,978	30,982	34,343
Indiana	1,260	2,337	2,256	2,083	8.0	14.7	15.6	16.3	10,080	34,354	35,194	33,936	93	89	87	110	9,374	30,575	30,619	37,330
Illinois	1,183	2,625	2,444	2,185	8.3	16.0	15.0	17.3	9,819	42,000	36,660	37,831	88	89	88	104	8,641	37,380	32,261	39,344
Michigan	700	1,025	936	802	10.0	18.0	18.0	20.0	7,000	18,450	16,848	16,026	96	88	89	112	6,720	16,236	14,995	17,949
Wisconsin	188	195	186	140	19.0	15.9	19.3	18.8	3,564	3,097	3,590	2,635	83	80	92	96	2,958	2,788	3,302	2,529
Minnesota	4,325	4,350	4,000	3,277	15.5	10.1	16.0	17.4	67,038	43,935	64,000	57,094	73	92	94	96	48,938	40,420	60,160	54,811
**Iowa	650	647	532	527	19.8	16.4	21.0	15.3	12,850	10,622	11,174	8,056	78	88	85	93	10,023	9,348	9,497	7,492
Missouri	1,900	2,300	1,881	2,017	12.5	15.7	13.8	14.8	23,750	36,110	25,958	29,837	90	88	87	105	21,375	31,777	22,583	31,329
North Dakota	7,990	9,150	7,700	8,189	18.0	8.0	5.0	14.3	143,820	73,200	38,500	116,782	69	89	90	92	99,236	65,148	34,650	107,439
South Dakota	3,675	3,700	3,650	3,217	14.2	4.0	12.8	14.6	52,185	14,800	46,720	47,060	69	91	89	90	36,008	13,468	41,581	42,354
Nebraska	3,123	3,098	2,394	2,663	17.6	13.4	16.2	17.9	55,052	41,574	38,760	47,686	69	87	80	89	37,985	36,169	31,008	42,440
Kansas	5,956	4,810	4,490	5,974	15.5	10.7	14.1	13.0	92,290	51,387	63,236	77,577	74	91	84	96	68,295	46,762	53,118	74,474
Kentucky	686	780	767	681	10.0	12.7	12.8	12.8	6,860	9,906	9,818	8,739	99	92	93	111	6,791	9,114	9,131	9,701

Tennessee	674	720	711	620	10.5	11.5	11.7	10.5	7,077	8,280	8,319	6,517	100	96	98	115	7,077	7,949	8,153	7,494
Alabama	30	30	28	14	10.6	11.5	12.0	8.1	318	345	336	114	113	120	113	130	359	414	380	148
Mississippi	8	9	5	†	12.0	12.0	14.0	11.9	96	108	70	4	97	100	116	121	93	108	81	6
Texas	735	700	700	326	15.0	9.4	15.0	7.9	11,025	6,580	10,500	2,561	93	100	98	118	10,253	6,580	10,290	3,022
Oklahoma	1,570	1,122	1,567	1,169	12.8	8.0	16.3	12.0	20,096	8,976	25,542	14,008	75	92	87	101	15,072	8,258	22,222	14,148
Arkansas	94	96	87	61	10.0	10.5	13.9	8.6	940	1,008	1,209	526	94	90	94	110	884	907	1,136	579
Montana	803	429	350	258	24.1	28.7	22.0	24.2	19,346	12,299	7,700	6,252	64	77	86	87	12,381	9,470	6,622	5,439
Wyoming	76	69	56	42	28.7	26.0	25.0	17.6	2,181	1,794	1,400	739	80	94	95	99	1,745	1,687	1,330	731
Colorado	453	438	403	341	24.2	18.9	22.3	21.2	10,968	8,274	8,994	7,224	73	84	82	93	8,006	6,950	7,376	6,718
New Mexico	59	55	41	32	20.9	22.9	20.0	15.6	1,232	1,262	820	500	90	100	100	117	1,109	1,262	820	585
Arizona	23	27	27	20	30.7	29.6	22.3	18.0	707	800	603	363	110	95	120	139	778	760	724	504
Utah	236	225	198	178	25.7	22.3	22.1	22.2	6,059	5,025	4,370	3,944	75	70	84	90	4,544	3,518	3,671	3,550
Nevada	39	36	30	14	29.2	28.3	26.5	27.8	1,137	1,018	795	390	100	95	109	104	1,137	968	866	406
Idaho	510	517	472	399	28.6	30.7	22.6	25.7	14,566	15,860	10,658	10,238	66	66	72	87	9,613	10,468	7,674	8,907
Washington	2,285	2,230	2,101	2,118	23.5	22.7	16.9	19.3	53,728	50,661	35,571	40,920	68	71	78	93	36,535	35,969	27,746	38,056
Oregon	842	796	717	763	25.0	21.0	22.1	16.3	21,018	16,726	15,853	12,457	72	75	84	93	15,132	12,545	13,317	11,585
California	370	480	550	478	17.0	18.0	18.0	13.0	6,290	8,640	9,900	6,203	93	88	94	111	5,850	7,603	9,306	6,886
United States	45,814	49,543	45,681	‡44,261	15.9	12.5	13.9	15.4	730,267	621,338	635,121	‡683,366	76.0	87.4	88.3	98.6	555,280	543,063	561,051	673,659

*Census.

†Less than 1,000 acres.

‡Includes 1,000 acres and 16,000 bushels in other states.

**Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

BARLEY.

State	Acreage, in thousands (000 omitted)				Yield per acre				Production in thousands (000 omitted)				Price paid farmers Dec. 1				Val. on basis of price paid farmers Dec. 1, in thousands (000 omitted)			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
Maine	4	4	4	4	26.2	28.0	31.0	25.8	105	112	124	107	77	90	76	77	81	101	94	82
New Hampshire	1	1	1	1	28.0	24.0	26.0	24.5	28	24	26	21	84	86	77	80	24	21	20	17
Vermont	13	12	12	11	35.0	30.5	31.0	26.9	455	366	372	285	80	82	68	77	364	300	263	219
New York	82	80	81	80	26.0	25.0	28.3	24.0	2,132	2,000	2,292	1,923	68	97	70	69	1,450	1,940	1,604	1,327
Pennsylvania	7	7	8	8	27.5	25.0	26.5	17.9	192	175	212	136	68	65	63	67	131	114	134	91
Maryland	4	4	4	4	27.0	23.0	31.0	30.1	108	92	124	135	68	60	61	64	73	55	76	87
Virginia	10	10	10	10	25.0	23.0	29.3	25.6	250	230	293	254	75	70	67	71	188	161	196	180
Ohio	20	20	22	24	31.0	27.2	28.5	23.6	620	544	627	569	55	84	60	61	341	457	376	347
Indiana	9	9	10	10	29.5	26.5	27.0	23.0	266	238	270	234	60	75	56	63	160	178	151	148
Illinois	57	55	55	63	31.5	28.0	30.2	25.5	1,796	1,540	1,661	1,614	53	92	56	52	952	1,417	930	839
Michigan	87	90	93	93	26.0	24.0	26.0	22.9	2,262	2,160	2,418	2,132	65	86	58	61	1,470	1,858	1,402	1,301
Wisconsin	845	820	800	816	29.4	25.5	25.9	27.1	24,843	20,910	20,720	22,156	55	99	64	56	13,664	20,701	13,261	12,407
Minnesota	1,490	1,475	1,450	1,574	28.2	19.0	21.0	22.2	42,018	28,025	30,450	34,928	41	96	60	47	17,227	26,904	18,270	16,416
‡Iowa	470	500	525	571	31.0	21.9	29.5	19.2	14,570	10,950	15,488	10,964	52	93	56	46	7,576	10,184	8,673	5,044
Missouri	6	6	7	8	24.8	20.0	27.0	17.0	149	120	189	134	66	75	60	68	98	90	113	91
North Dakota	1,176	1,050	1,090	1,216	29.9	19.5	5.5	21.7	35,162	20,475	5,995	26,366	35	85	55	43	12,307	17,404	3,297	11,337
South Dakota	887	1,020	1,050	1,115	26.0	5.4	18.2	20.1	23,062	5,508	19,110	22,396	42	88	57	45	9,686	4,847	10,893	10,078
Nebraska	113	120	127	114	22.0	11.0	18.5	17.5	2,486	1,320	2,350	1,988	42	60	45	43	1,044	792	1,058	855
Kansas	176	250	260	166	23.5	6.5	18.0	13.4	4,136	1,625	4,680	2,222	40	60	45	53	1,654	975	2,106	1,178
Kentucky	3	3	3	3	26.0	28.7	24.0	24.0	78	86	72	66	75	79	65	76	58	68	47	50
Tennessee	2	3	3	3	26.0	28.0	23.0	20.7	52	84	69	53	80	90	80	79	42	76	55	42
Texas	6	5	5	4	29.3	18.0	30.0	13.5	176	90	150	52	78	93	90	100	137	84	135	52
Oklahoma	8	10	11	10	20.0	10.0	30.0	12.4	160	100	330	128	50	61	54	65	80	61	178	83
Montana	39	31	30	27	36.5	34.5	28.0	27.7	1,424	1,070	840	753	53	68	62	63	755	728	521	475
Wyoming	11	11	10	9	34.0	34.0	30.0	22.1	374	374	300	189	62	75	67	74	232	280	201	140

Colorado	76	74	75	71	39.0	29.0	32.0	26.5	2,964	2,146	2,400	1,889	50	69	60	66	1,482	1,481	1,440	1,247
New Mexico	2	2	2	2	35.0	33.0	25.0	20.4	70	66	50	44	71	70	80	100	50	46	40	43
Arizona	36	35	35	33	40.0	36.5	36.0	30.7	1,440	1,278	1,260	1,008	87	87	90	88	1,253	1,112	1,134	887
Utah	25	24	23	27	45.0	43.0	36.0	33.3	1,125	1,032	828	891	59	66	60	66	664	681	497	588
Nevada	12	12	12	11	41.0	40.0	40.0	33.8	492	480	480	389	87	81	70	75	428	389	336	292
Idaho	159	142	136	132	43.5	42.0	33.0	34.7	6,916	5,964	4,488	4,598	51	70	50	59	3,527	4,175	2,244	2,713
Washington	183	176	176	172	43.0	37.0	29.0	33.9	7,869	6,512	5,104	5,835	53	68	57	64	4,171	4,428	2,909	3,734
Oregon	119	116	113	109	36.0	34.0	31.5	21.8	4,281	3,944	3,560	2,378	55	65	62	66	2,356	2,564	2,207	1,569
California	1,392	1,450	1,500	1,195	30.0	28.0	31.0	22.1	41,760	40,600	46,500	26,442	70	85	55	74	29,232	34,510	25,575	19,567
United States	7,530	7,627	7,743	†7,698	29.7	21.0	22.5	22.5	223,824	160,240	173,832	†173,321	50.5	86.9	57.8	54.0	112,957	139,182	160,426	93,526

---

*Census.

†Includes 2,000 acres and 42,000 bushels in other states.

‡Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

RYE.

State.	Acreage, in thousands (000 omitted).				Yield per acre				Production, in thousands (000 omitted).				Price paid farmers Dec. 1				Val. on basis of price paid farmers Dec. 1, in thousands (000 omitted).			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
Vermont	1	1	1	1	20.0	22.5	17.5	15.0	20	22	18	17	90	95	85	100	18	21	15	17
Massachusetts	3	3	3	3	18.5	16.0	17.0	17.0	56	48	51	59	100	95	91	105	56	46	48	62
Connecticut	7	8	8	8	17.5	18.5	20.0	18.1	122	148	160	138	92	93	86	90	112	138	138	124
New York	128	135	140	131	16.5	16.7	18.3	15.4	2,112	2,254	2,562	2,011	76	89	74	80	1,605	2,006	1,896	1,608
New Jersey	72	72	74	69	17.5	16.4	18.0	13.8	1,260	1,181	1,332	951	79	83	77	79	995	980	1,026	752
Pennsylvania	282	285	288	273	17.5	15.1	17.0	12.8	4,935	4,304	4,896	3,497	77	80	73	80	3,800	3,443	3,574	2,797
Delaware	1	1	1	1	14.0	15.0	15.5	11.2	14	15	16	11	81	95	69	75	11	14	11	9
Maryland	27	28	29	28	15.5	14.5	16.1	12.7	418	406	467	358	80	86	75	78	334	349	350	279
Virginia	48	48	50	48	12.5	11.5	13.5	19.2	600	552	675	438	85	89	80	84	510	491	540	368
West Virginia	17	17	17	16	13.0	11.0	12.9	9.4	221	187	219	149	84	90	90	90	186	168	197	134
North Carolina	44	47	50	49	9.3	10.0	10.0	5.8	409	470	500	280	105	100	101	103	429	470	505	289
South Carolina	3	3	3	3	9.5	10.0	10.0	7.0	28	30	30	21	145	145	146	141	41	44	44	29
Georgia	11	12	12	12	9.2	9.5	10.4	4.9	101	114	125	60	140	138	140	150	141	157	175	90
Ohio	57	60	65	68	15.5	15.5	16.5	13.6	884	930	1,072	922	75	85	72	76	663	790	772	701
Indiana	64	73	80	83	14.5	13.7	15.8	13.4	928	1,000	1,264	1,122	68	80	68	74	631	800	860	830
Illinois	48	52	58	59	16.0	16.8	17.4	13.4	768	874	1,009	787	70	81	71	74	538	708	716	583
Michigan	370	400	418	419	13.3	14.6	15.3	13.9	4,921	5,840	6,395	5,814	65	85	68	69	3,199	4,964	4,349	4,012
Wisconsin	341	355	340	339	18.3	17.0	16.0	14.1	6,240	6,035	5,440	4,798	61	84	71	68	3,806	5,069	3,862	3,262
Minnesota	262	240	256	267	23.0	18.7	17.0	16.6	6,026	4,488	4,352	4,426	50	78	64	60	3,013	3,501	2,785	2,656
**Iowa	35	30	35	42	19.0	18.0	18.5	13.6	665	540	648	571	62	77	64	63	412	416	415	360
Missouri	15	16	18	20	14.8	14.1	15.0	10.3	222	226	270	206	80	84	75	82	178	190	202	169
North Dakota	48	36	30	48	18.0	16.6	8.5	14.3	864	598	255	689	47	76	63	57	406	454	161	393
South Dakota	16	13	13	14	19.5	10.0	17.0	14.1	312	130	221	195	52	76	61	59	162	99	135	115
Nebraska	55	52	59	63	16.0	13.0	16.0	10.5	880	676	944	661	56	75	60	61	493	507	566	403
Kansas	30	18	20	17	15.9	11.0	14.0	9.3	477	198	280	160	68	81	73	75	324	160	204	120

Kentucky	21	22	25	27	13.0	12.0	13.0	9.5	273	264	325	255	88	94	85	88	240	248	276	225
Tennessee	17	19	22	23	11.5	11.9	11.0	6.2	196	226	242	141	98	99	92	96	192	224	223	135
Alabama	1	1	1	†	11.5	10.0	12.0	8.5	12	10	12	4	134	125	120	136	16	12	14	6
Texas	2	2	1	1	16.6	10.0	11.5	8.1	33	20	12	4	110	107	103	123	36	21	12	5
Oklahoma	4	4	4	4	12.0	9.5	13.7	8.7	48	38	55	37	87	104	81	93	42	40	45	35
Arkansas	1	1	1	1	10.5	10.0	12.0	6.8	10	10	12	7	105	90	98	105	10	9	12	8
Montana	10	8	6	6	23.5	23.0	20.0	18.4	235	184	120	111	60	72	68	75	141	132	82	83
Wyoming	3	2	1	2	19.0	20.0	18.5	13.5	57	40	18	20	65	90	81	90	37	36	15	18
Colorado	25	21	20	16	19.5	12.0	14.0	12.6	488	252	280	198	55	70	67	73	268	176	188	145
Utah	6	5	5	5	15.0	15.5	18.5	12.6	90	78	92	66	68	70	68	70	61	55	63	46
Idaho	3	3	3	3	22.0	22.5	20.0	12.2	66	68	60	40	60	67	66	70	40	46	40	28
Washington	9	8	6	5	20.0	22.0	20.5	9.3	180	176	123	51	65	80	89	94	117	141	109	48
Oregon	22	18	15	13	16.0	19.5	15.1	11.4	352	351	226	147	70	90	100	100	246	316	226	147
California	8	8	7	7	17.6	17.0	17.0	10.1	141	136	119	71	90	85	86	104	127	116	102	74
United States	2,117	2,127	2,185	‡2,196	16.8	15.6	16.0	13.4	35,664	33,119	34,897	‡29,520	66.3	83.2	71.5	71.8	23,636	27,557	24,953	21,164

*Census.

†Less than 1,000 acres.

‡Includes 2,000 acres and 27,000 bushels in other states.

**Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

BUCKWHEAT.

State.	Acreage, in thousands (000 omitted).				Yield per acre				Production, in thousands (000 omitted).				Price paid farmers Dec. 1				Val. on basis of price paid farmers Dec. 1, in thousands (000 omitted).			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
Maine	14	15	16	15	29.4	30.0	32.5	20.4	412	450	520	317	70	70	68	70	288	315	354	222
New Hampshire	1	1	1	1	31.0	27 3	31.0	25.0	31	27	31	26	72	81	62	76	22	22	19	20
Vermont	8	8	8	8	30.0	24.3	24.0	22.8	240	194	192	174	72	85	70	76	173	165	134	133
Massachusetts	2	2	2	2	21.0	21.0	22.0	20.2	42	42	44	33	85	89	85	75	36	37	37	25
Connecticut	3	3	3	3	20.5	19.0	19.5	18.5	62	57	58	52	88	95	83	100	55	54	48	52
New York	277	280	286	286	23.8	21.3	23.0	19.9	6,593	5,964	6,578	5,692	64	73	65	69	4,220	4,354	4,276	3,927
New Jersey	12	13	13	13	22.0	20.0	21.5	16.2	264	260	280	213	72	75	69	74	190	195	193	157
Pennsylvania	306	291	293	293	24.2	21.9	19.5	16.4	7,405	6,373	5,714	4,797	64	69	62	68	4,739	4,397	3,543	3,262
Delaware	4	4	4	4	16.0	19.0	20.5	13.4	64	76	82	54	66	65	65	60	42	49	53	32
Maryland	12	12	11	10	17.5	20.0	18.5	14.7	210	240	204	152	71	67	66	74	149	161	135	113
Virginia	24	24	25	25	21.5	16.0	18.0	13.0	516	384	450	332	75	70	77	76	387	269	346	252
West Virginia	37	36	38	33	24.0	24.0	23.0	16.0	888	864	874	534	75	85	77	76	666	734	673	406
North Carolina	10	10	11	12	17.5	19.0	19.0	12.4	175	190	209	144	85	80	80	80	149	152	167	115
Ohio	21	19	23	26	19.5	21.0	18.0	18.5	410	399	414	483	70	78	75	78	287	311	310	377
Indiana	5	5	6	7	19.0	18.3	17.7	12.2	95	92	106	85	73	74	70	77	69	68	74	65
Illinois	4	4	5	5	22.0	18.1	20.0	14.5	88	72	100	68	80	95	90	80	70	68	90	54
Michigan	64	67	72	76	17.0	18.0	15.3	12.6	1,088	1,206	1,102	958	65	71	62	66	707	856	683	632
Wisconsin	17	18	20	26	17.0	17.5	14.0	11.5	289	315	280	303	66	75	75	78	191	236	210	236
Minnesota	6	7	8	10	21.0	18.0	16.0	14.1	126	126	128	145	65	76	72	71	82	96	92	103
‡Iowa	7	7	8	9	19.0	17.5	14.9	13.3	135	122	119	121	75	90	83	85	100	110	99	102
Missouri	2	2	2	2	15.0	10.0	16.5	12.1	30	20	33	20	95	105	87	90	28	21	29	18
Nebraska	1	1	1	1	18.0	16.0	20.0	8.2	18	16	20	10	90	95	90	90	16	15	18	9
Kansas	1	1	1	1	16.0	12.0	15.0	10.7	16	12	15	8	78	98	90	100	12	12	14	8
Tennessee	3	3	3	3	18.0	16.0	15.0	11.6	54	48	45	33	78	79	86	79	42	38	39	26
United States	841	833	860	†878	22.9	21.1	20.5	16.9	19,249	17,549	17,598	†14,849	66.1	72.6	66.1	70.1	12,720	12,735	11,636	10,346

*Census.

†Includes 7,000 acres and 95,000 bushels in other states.

‡Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

OATS.

State.	Acreage, in thousands (000 omitted).				Yield per acre				Production, in thousands (000 omitted).				Price paid farmers Dec. 1				Val. on basis of price paid farmers Dec. 1, in teousands (000 omitted).			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
Maine	133	135	130	121	34.6	38.5	42.4	35.0	4,602	5,198	5,512	4,232	51	54	48	58	2,347	2,807	2,646	2,455
New Hampshire	12	12	11	11	39.0	33.8	42.8	35.6	468	406	471	386	48	61	51	61	225	248	240	247
Vermont	77	76	76	72	43.0	35.0	41.5	29.9	3,311	2,660	3,154	2,141	48	59	50	50	1,589	1,569	1,577	1,071
Massachusetts	8	8	8	8	34.0	35.0	35.5	33.0	272	280	284	268	47	58	50	58	128	162	142	156
Rhode Island	2	2	2	2	28.6	29.0	35.0	27.9	57	58	70	48	45	58	48	53	26	34	34	26
Connecticut	11	11	11	10	30.7	35.1	36.8	26.8	338	386	405	274	49	56	44	53	166	216	178	145
New York	1,192	1,310	1,320	1,303	30.8	29.5	34.5	26.7	36,714	38,645	45,540	34,795	42	51	42	49	15,420	19,709	19,127	17,050
New Jersey	67	71	72	72	27.6	28.5	37.1	19.1	1,849	2,024	2,671	1,377	44	56	44	50	814	1,012	1,175	688
Pennsylvania	1,099	1,121	1,144	1,144	33.1	28.3	35.2	24.6	36,377	31,724	40,269	28,173	41	50	41	50	14,915	15,862	16,510	14,086
Delaware	4	4	4	4	30.5	30.0	33.8	23.2	122	120	135	98	45	47	45	48	55	56	58	47
Maryland	45	46	47	49	30.0	27.0	30.0	23.6	1,350	1,242	1,410	1,161	45	49	46	49	608	609	649	569
Virginia	175	194	198	204	22.2	20.0	22.0	14.1	3,885	3,880	4,356	2,884	52	51	49	54	2,020	2,095	2,134	1,558
West Virginia	111	110	110	104	28.0	22.0	25.2	16.7	3,108	2,420	2,772	1,729	47	56	50	54	1,461	1,355	1,386	934
North Carolina	204	219	221	228	18.6	16.5	18.2	12.2	3,794	3,614	4,022	2,783	62	63	60	66	2,352	2,277	2,413	1,836
South Carolina	324	345	336	324	21.5	20.4	21.0	17.7	6,966	7,038	7,056	5,715	66	72	65	72	4,598	5,067	4,586	4,137
Georgia	364	404	404	412	20.8	21.5	18.2	15.1	7,571	8,686	7,353	6,199	65	70	64	71	4,921	6,080	4,706	4,401
Florida	43	43	42	43	17.2	13.5	16.2	14.0	740	580	680	606	70	75	65	75	518	435	442	455
Ohio	2,120	1,700	1,770	1,788	44.0	32.1	37.2	32.3	93,280	54,576	65,844	57,591	33	45	35	41	30,782	24,559	23,045	23,612
Indiana	1,990	1,640	1,680	1,668	40.1	28.7	35.4	30.3	79,789	47,068	59,472	50,608	30	42	31	39	[illegible]	[illegible]	18,436	19,737
Illinois	4,220	4,220	4,325	4,177	43.3	28.8	38.0	36.1	182,726	121,536	164,350	150,386	28	42	30	38	51,163	51,045	49,305	57,147
Michigan	1,485	1,500	1,515	1,429	34.9	28.6	34.0	30.7	51,826	42,900	51,510	43,870	33	46	35	41	17,103	19,734	18,028	17,986
Wisconsin	2,272	2,250	2,250	2,161	37.3	20.8	29.8	32.9	84,746	67,050	67,050	71,336	32	45	34	39	27,119	30,172	22,797	27,821
Minnesota	2,948	2,948	2,977	2,977	41.7	22.8	28.7	31.5	122,932	67,214	85,440	93,898	26	40	32	35	31,962	26,886	27,341	32,864
Iowa	4,928	4,950	5,100	4,655	44.2	25.5	37.8	27.6	217,818	126,225	192,780	128,198	27	41	27	35	58,811	51,752	52,051	44,869
Missouri	1,125	1,200	1,200	1,073	33.0	14.8	33.6	23.1	37,125	17,760	40,320	24,828	35	45	32	43	12,994	7,992	12,902	10,676

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

OATS—Continued

State.	Acreage, in thousands (000 omitted).				Yield per acre				Production, in thousands (000 omitted).				Price paid fermers Dec. 1				Val. on basis of price paid farmers Dec 1, in thousands (000 omitted).			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
North Dakota	2,300	2,180	2,165	2,147	41.4	23.5	7.0	30.7	95,220	51,230	15,155	65,887	22	41	37	33	20,948	21,004	5,607	21,743
South Dakota	1,550	1,540	1,550	1,559	33.8	7.4	23.0	27.9	52,390	11,396	35,650	43,566	25	43	30	34	13,098	4,900	10,695	14,812
Nebraska	2,275	2,500	2,532	2,366	24.4	13.9	28.0	22.6	55,510	34,750	70,896	53,360	30	43	28	35	16,653	14,912	19,851	18,676
Kansas	1,720	2,000	1,675	933	32.0	15.0	33.3	24.6	55,040	30,000	55,778	22,924	35	45	34	43	19,264	13,500	18,965	9,857
Kentucky	150	170	175	174	26.9	18.4	25.0	13.8	4,035	3,128	4,375	2,406	44	50	45	51	1,775	1,564	1,969	1,227
Tennessee	258	315	342	342	21.7	19.5	23.0	13.8	5,599	6,142	7,866	4,721	47	50	46	53	2,632	3,071	3,618	2,502
Alabama	260	283	283	257	20.0	19.2	18.5	12.6	5,200	5,434	5,236	3,251	62	66	60	70	3,224	3,586	3,142	2,276
Mississippi	113	130	120	97	17.4	18.4	19.2	13.1	1,966	2,392	2,304	1,269	60	65	55	68	1,180	1,555	1,267	863
Louisiana	34	40	36	30	20.8	21.0	21.5	14.1	707	840	774	420	51	65	49	62	361	546	379	260
Texas	865	737	688	410	36.0	25.1	35.0	16.0	31,140	18,499	24,080	7,035	43	54	47	62	13,399	9,989	11,318	4,361
Oklahoma	936	909	699	609	25.1	9.0	36.5	27.3	23,491	8,181	25,514	16,606	34	48	37	46	7,988	3,927	9,440	7,639
Arkansas	175	205	207	197	19.9	20.0	27.5	16.3	3,482	4,100	5,692	3,213	50	53	46	59	1,741	2,173	2,618	1,896
Montana	476	425	390	333	48.0	49.8	38.0	41.4	22,848	21,165	14,820	13,806	35	40	46	42	7,997	8,466	6,817	5,798
Wyoming	205	190	161	124	41.8	34.5	32.0	27.1	8,569	6,555	5,152	3,361	37	50	50	50	3,171	3,278	2,576	1,681
Colorado	290	290	284	276	42.8	35.0	39.1	27.7	12,412	10,150	11,104	7,643	38	48	46	53	4,717	4,872	5,108	4,051
New Mexico	53	48	42	34	34.7	38.8	27.4	21.4	1,839	1,862	1,151	721	45	57	62	66	828	1,061	714	476
Arizona	6	6	5	6	44.7	42.0	40.1	32.3	268	252	200	189	70	60	90	79	188	151	180	150
Utah	91	87	85	81	46.4	44.7	43.0	39.9	4,222	3,889	3,655	3,221	49	47	48	52	2,069	1,828	1,754	1,675
Nevada	10	8	7	8	40.0	45.0	44.7	42.7	400	360	313	335	52	62	63	59	208	223	197	198
Idaho	348	331	319	303	48.9	44.0	38.5	37.4	17,017	14,564	12,282	11,328	35	40	42	50	5,956	5,826	5,158	5,664
Washington	284	281	275	270	48.2	51.7	42.8	49.0	13,689	14,528	11,770	13,228	40	45	48	48	5,476	6,538	5,650	6,349
Oregon	359	359	355	339	38.2	34.7	34.5	32.1	13,714	12,457	12,248	10,881	41	44	47	52	5,623	5,481	5,757	5,658
California	200	210	200	192	39.0	34.0	37.0	21.6	7,800	7,140	7,400	4,144	55	59	50	66	4,290	4,213	3,700	2,735
United States	37,917	37,763	37,548	35,159	37.4	24.4	31.6	28.6	1,418,337	922,298	1,186,341	1,007,129	31.9	45.0	34.4	40.2	452,469	414,663	408,388	405,120

*Census.

†Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

FLAXSEED.

State.	Acreage, in thousands (000 omitted).				Yield per acre				Production, in thousands (000 omitted).				Price paid farmers Dec. 1				Val. on basis of price paid farmers Dec. 1, in thousands (000 omitted).			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts	Cts	Cts	Cts	Dolls.	Dolls.	Dolls.	Dolls.
Wisconsin	10	10	10	9	12.5	12.0	10.0	12.6	125	120	100	119	127	185	220	135	159	222	220	160
Minnesota	404	400	377	358	10.2	8.0	7.5	9.1	4,121	3,200	2,828	3,277	120	182	230	150	4,945	5,824	6,504	4,916
‡Iowa	35	16	14	15	11.5	8.0	12.2	9.1	402	128	171	141	124	185	220	130	498	237	376	183
Missouri	12	18	18	21	6.0	3.0	8.4	7.5	72	54	151	155	110	190	210	115	79	103	317	178
North Dakota	1,246	1,200	1,117	1,068	9.7	7.6	3.6	9.6	12,086	9,120	4,021	10,246	114	184	235	157	13,778	16,781	9,449	16,086
South Dakota	619	607	570	519	8.6	5.3	5.0	9.2	5,323	3,217	2,850	4,760	113	178	229	151	6,015	5,726	6,526	7,187
Nebraska	2	2	2	3	9.5	5.0	8.0	7.0	19	10	16	21	128	185	225	122	24	18	36	25
Kansas	50	75	55	45	6.0	3.0	8.2	6.7	300	225	451	302	130	190	210	110	390	428	947	333
Oklahoma	1	1	1	1	9.0	3.0	9.0	8.8	9	3	9	9	138	180	112	120	12	5	10	11
Montana	460	425	300	38	12.0	7.7	7.0	11.9	5,520	3,272	2,100	447	112	180	240	160	6,182	5,890	5,040	716
Colorado	12	3	3	3	8.0	7.0	7.0	4.7	96	21	21	13	125	180	225	------	120	38	47	--------
United States	2,851	2,757	2,467	†2,083	9.8	7.0	5.2	9.4	28,073	19,370	12,718	†19,513	114.7	182.1	231.7	152.9	32,202	35,272	29,472	29,795

*Census.

†Includes 3,000 acres and 23,000 bushels in other states.

‡Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

POTATOES.

State.	Acres, in thousands (000 omitted).				Yield per acre				Production, in thousands (000 omitted).				Price paid farmers Dec. 1.				Value on basis of price paid farmers Dec. 1, in thousands (000 omitted)			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Bu.	Cts.	Cts.	Cts.	Cts.	Dolls.	Dolls.	Dolls.	Dolls.
Maine	117	118	133	136	198	180	220	210	23,166	21,240	29,260	28,557	55	77	42	47	12,741	16,355	12,289	13,422
New Hampshire	17	17	17	17	140	125	150	136	2,380	2,125	2,550	2,366	61	87	52	64	1,452	1,849	1,326	1,511
Vermont	26	26	26	27	140	105	130	154	3,640	2,730	3,380	4,146	55	79	45	44	2,002	2,157	1,521	1,824
Massachusetts	26	25	25	24	130	93	125	123	3,380	2,325	3,125	2,946	75	96	70	79	2,535	2,232	2,188	2,327
Rhode Island	5	5	5	5	113	110	136	119	565	550	680	553	77	106	61	80	435	583	415	442
Connecticut	23	23	23	24	107	85	125	112	2,461	1,955	2,875	2,684	78	105	70	83	1,920	2,053	2,012	2,228
New York	360	375	395	394	106	74	102	123	38,160	27,750	40,290	48,598	58	90	48	50	22,133	24,975	19,339	24,299
New Jersey	92	84	87	73	108	73	105	110	9,936	6,132	9,135	8,057	63	105	65	82	6,258	6,439	5,938	6,607
Pennsylvania	265	270	275	262	109	56	88	83	28,885	15,120	24,200	21,741	57	93	52	65	16,464	14,062	12,584	14,131
Delaware	11	11	11	10	100	60	103	91	1,100	660	1,133	880	70	96	60	72	770	634	680	634
Maryland	37	39	40	40	112	45	95	88	4,144	1,755	3,800	3,476	58	91	54	66	2,404	1,597	2,052	2,294
Virginia	95	95	97	87	87	45	98	101	8,265	4,275	9,506	8,771	65	96	58	70	5,372	4,104	5,513	6,149
West Virginia	47	44	45	43	112	45	92	96	5,264	1,980	4,140	4,077	62	104	67	68	3,264	2,059	2,774	2,772
North Carolina	30	31	33	32	85	48	89	74	2,550	1,488	2,937	2,372	76	108	73	81	1,938	1,607	2,144	1,922
South Carolina	10	10	10	9	90	70	90	91	900	700	900	782	112	122	105	115	1,008	854	945	900
Georgia	12	12	12	12	78	72	82	75	936	861	984	886	87	110	105	100	814	950	1,033	886
Florida	11	10	10	9	93	90	90	101	1,023	900	900	857	110	145	100	120	1,125	1,305	900	1,028
Ohio	186	190	210	213	112	65	82	95	20,832	12,350	17,220	20,323	53	84	51	56	11,041	10,374	8,782	11,381
Indiana	87	89	97	99	114	58	84	90	9,918	5,162	8,148	8,906	50	87	50	52	4,959	4,491	4,074	4,631
Illinois	137	138	146	138	101	50	75	88	13,837	6,900	10,950	12,166	60	90	59	61	8,302	6,210	6,460	7,421
Michigan	350	330	350	365	105	94	105	105	36,750	31,020	36,750	38,244	41	71	31	35	15,068	22,024	11,392	13,385
Wisconsin	291	280	280	290	120	116	95	110	34,920	32,480	26,600	31,968	34	62	38	38	11,873	20,138	10,108	12,148
Minnesota	245	225	220	224	135	115	61	120	33,075	25,875	13,420	26,803	28	58	64	35	9,261	15,008	8,589	9,381
†Iowa	174	174	172	170	109	74	72	87	18,966	12,876	12,384	14,710	46	73	60	55	8,724	9,399	7,430	8,091
Missouri	95	95	100	96	84	27	86	81	7,980	2,565	8,600	7,796	69	102	68	67	5,506	2,616	5,848	5,224

North Dakota	52	42	40	54	128	120	41	103	6,656	5,040	1,640	5,551	28	55	91	45	1,864	2,772	1,492	2,498
South Dakota	62	56	55	50	105	72	44	69	6,510	4,032	2,420	3,442	36	70	85	63	2,344	2,822	2,057	2,168
Nebraska	118	116	115	111	80	52	60	73	9,440	6,032	6,900	7,118	51	92	84	60	4,814	5,549	5,796	4,871
Kansas	70	80	82	79	82	22	57	71	5,740	1,760	4,674	5,647	73	106	90	79	4,190	1,866	4,207	4,461
Kentucky	51	52	57	56	101	39	92	92	5,151	2,028	5,244	5,120	67	107	62	64	3,451	2,170	3,251	3,277
Tennessee	38	38	40	41	88	41	80	71	3,344	1,558	3,200	2,923	70	108	65	71	2,341	1,683	2,080	2,075
Alabama	15	15	15	14	81	78	80	78	1,215	1,170	1,200	1,129	90	118	94	98	1,094	1,381	1,128	1,106
Mississippi	10	9	9	8	89	83	85	77	890	747	765	645	90	115	94	95	801	859	719	613
Louisiana	20	22	25	20	73	69	55	60	1,460	1,518	1,375	1,184	83	100	90	91	1,212	1,518	1,238	1,077
Texas	52	50	54	36	63	57	51	62	3,276	2,850	2,754	2,236	105	126	110	105	3,440	3,591	3,029	2,370
Oklahoma	29	30	32	32	60	18	60	59	1,740	540	1,920	1,898	93	124	100	95	1,618	670	1,920	1,803
Arkansas	25	26	30	30	70	55	84	71	1,750	1,430	2,520	2,097	92	115	85	92	1,610	1,644	2,142	1,929
Montana	37	27	22	21	165	150	120	176	6,105	4,050	2,640	3,241	40	74	85	51	2,442	2,997	2,244	1,653
Wyoming	11	10	9	8	140	42	100	112	1,540	420	900	932	60	140	82	63	924	588	738	587
Colorado	85	90	86	86	95	35	100	137	8,075	3,150	8,600	11,781	41	99	55	57	3,311	3,118	4,730	6,715
New Mexico	9	10	13	6	100	80	47	47	900	800	611	295	65	100	104	101	585	800	635	298
Arizona	1	1	1	1	125	95	92	84	125	95	92	97	125	140	126	130	156	133	116	126
Utah	19	15	14	14	185	140	142	170	3,515	2,100	1,988	2,409	49	65	59	43	1,722	1,785	1,173	1,036
Nevada	12	8	6	5	178	160	150	158	2,136	1,280	900	767	60	93	80	85	1,282	1,190	720	652
Idaho	35	29	28	28	185	180	142	166	6,475	5,226	3,976	4,710	29	65	65	48	1,878	3,393	2,584	2,261
Washington	68	59	56	58	167	160	131	132	11,356	9,440	7,336	7,667	36	68	73	47	4,088	6,419	5,355	3,604
Oregon	65	46	42	41	155	130	105	109	10,075	5,980	4,410	4,823	31	67	70	60	3,123	4,007	3,087	2,894
California	78	72	70	68	130	135	130	145	10,140	9,720	9,100	9,824	65	90	85	77	6,591	8,748	7,735	7,564
United States	3,711	3,619	3,720	3,669	113.4	80.9	93.8	106.1	20,647	292,737	349,032	389,195	50.5	79.9	55.7	54.1	212,550	233,778	194,566	210,667

*Census.

†Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly will be found in part 3 of this year book.

ACREAGE, PRODUCTION AND VALUE OF THE PRINCIPAL FARM CROPS OF THE UNITED STATES IN 1909, 1910, 1911 AND 1912, BY STATES—Continued.

HAY.

State.	Acres, in thousands (000 omitted).				Yield per acre				Production, in thousands (000 omitted).				Price paid farmers Dec. 1.				Value on basis of price paid farmers Dec. 1, in thousands (000 omitted).			
	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909*	1912	1911	1910	1909	1912	1911	1910	1909
	Acres	Acres	Acres	Acres	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Dolls	Dolls	Dolls	Dolls	Dolls.	Dolls.	Dolls.	Dolls.
Maine	1,231	1,219	1,219	1,219	1.16	1.10	1.25	.83	1,428	1,341	1,524	1,010	13.70	14.40	12.80	14.70	19,564	19,310	19,507	14,843
New Hampshire	501	496	496	496	1.25	1.05	1.20	.92	626	521	595	455	15.00	17.20	15.80	17.90	9,390	8,961	9,401	8,154
Vermont	1,010	1,010	1,040	961	1.50	1.30	1.35	1.08	1,515	1,313	1,404	1,036	14.00	14.00	12.40	14.70	21,210	18,382	17,410	15,235
Massachusetts	477	472	477	473	1.25	1.08	1.28	1.31	596	510	611	618	21.50	23.00	19.10	18.90	12,814	11,730	11,670	11,684
Rhode Island	58	57	59	58	1.13	1.00	1.18	1.22	66	57	70	71	22.20	24.10	19.60	18.60	1,465	1,374	1,372	1,322
Connecticut	379	375	376	374	1.15	1.10	1.35	1.12	436	412	508	418	22.50	23.50	19.00	19.30	9,810	9,682	9,652	8,071
New York	4,720	4,720	4,780	4,721	1.25	1.02	1.32	1.08	5,900	4,814	6,310	5,109	14.90	17.90	13.70	14.20	87,910	86,171	86,447	72,547
New Jersey	362	351	358	358	1.44	1.05	1.50	1.29	521	369	537	464	20.00	22.00	18.20	16.50	10,420	8,118	9,773	7,649
Pennsylvania	3,173	3,022	3,083	2,994	1.43	1.00	1.38	1.08	4,537	3,022	4,255	3,212	15.60	20.00	15.00	14.60	70,777	60,440	63,825	47,328
Delaware	72	69	70	69	1.33	.88	1.43	1.30	96	61	100	90	15.00	22.50	14.80	15.00	1,440	1,372	1,480	1,357
Maryland	381	356	375	384	1.51	.72	1.35	1.14	575	256	506	437	14.40	22.40	15.40	14.40	8,280	5,734	7,792	6,291
Virginia	741	699	759	742	1.20	.64	1.19	1.04	889	447	903	772	15.20	20.50	14.50	13.30	13,513	9,164	13,094	10,265
West Virginia	745	675	695	693	1.38	.66	1.20	.89	1,028	446	834	619	15.00	20.00	15.00	13.30	15,420	8,920	12,510	8,229
North Carolina	293	290	315	315	1.30	1.05	1.50	.95	381	304	472	299	16.70	17.00	14.60	14.40	6,363	5,168	6,891	4,310
South Carolina	194	194	198	195	1.15	1.08	1.25	.87	223	210	248	170	18.00	17.00	16.00	15.50	4,014	3,570	3,968	2,635
Georgia	234	213	213	213	1.35	1.35	1.40	1.01	316	288	298	215	17.00	17.00	16.40	15.80	5,372	4,896	4,887	3,396
Florida	43	39	40	40	1.25	1.30	1.33	1.04	54	51	53	41	18.10	18.50	17.00	15.00	977	944	901	618
Ohio	2,960	2,850	3,200	3,182	1.36	.98	1.39	1.28	4,026	2,793	4,448	4,074	13.00	18.90	12.50	10.90	52,338	52,788	55,600	44,403
Indiana	1,885	1,725	1,925	2,037	1.37	.94	1.30	1.21	2,582	1,622	2,502	2,464	11.40	16.80	11.90	10.50	29,435	27,250	29,774	25,874
Illinois	2,512	2,590	3,060	3,104	1.30	.82	1.33	1.27	3,266	2,124	4,070	3,932	12.60	17.00	12.00	9.90	41,152	36,108	48,840	38,932
Michigan	2,395	2,395	2,560	2,592	1.33	1.16	1.30	1.24	3,185	2,778	3,328	3,207	12.70	17.00	13.60	11.40	40,450	47,226	45,261	36,563
Wisconsin	2,250	2,250	2,430	2,579	1.60	1.20	1.00	1.52	3,600	2,700	2,430	3,926	12.10	15.60	15.10	9.60	43,560	42,120	36,693	37,687
Minnesota	1,661	1,582	1,797	1,835	1.53	1.00	1.00	1.59	2,541	1,582	1,797	2,917	6.40	11.00	9.10	6.00	16,262	18,826	16,353	17,502
†Iowa	3,537	3,573	3,970	4,023	1.40	.80	1.05	1.52	4,952	2,858	4,168	6,135	9.50	12.50	9.60	7.10	47,044	35,725	40,013	43,556
Missouri	3,187	2,924	3,249	3,321	1.30	.60	1.30	1.10	4,143	1,754	4,224	3,655	9.80	13.30	9.20	8.30	40,601	23,328	38,861	30,334

North Dakota	364	357	350	427	1.40	1.10	.55	1.24	510	393	192	530	5.50	7.00	7.60	5.00	2,805	2,751	1,459	2,649
South Dakota	460	398	442	490	1.46	.55	.80	1.58	672	219	354	775	6.10	8.50	7.10	5.10	4,099	1,862	2,513	3,953
Nebraska	1,150	1,162	1,291	1,334	1.35	.85	1.00	1.83	1,552	988	1,291	2,448	8.40	9.70	8.90	6.00	13,037	9,584	11,490	14,686
Kansas	1,627	1,550	1,650	1,696	1.50	.85	1.15	1.73	2,440	1,318	1,898	2,936	7.60	9.90	7.80	6.00	18,544	13,048	14,804	17,615
Kentucky	815	840	940	917	1.23	.95	1.29	.99	1,002	798	1,213	907	13.70	17.30	13.10	11.90	13,727	13,805	15,890	10,798
Tennessee	888	925	1,004	995	1.30	1.00	1.40	1.02	1,154	925	1,406	1,011	15.80	16.70	13.40	12.80	18,233	15,448	18,840	12,947
Alabama	209	209	209	192	1.25	1.40	1.43	1.04	261	293	299	200	14.60	12.80	13.20	13.50	3,811	3,750	3,947	2,704
Mississippi	201	199	199	164	1.48	1.50	1.42	1.23	297	298	283	202	12.50	11.00	12.20	11.50	3,712	3,278	3,453	2,320
Louisiana	142	150	165	158	1.65	1.30	1.75	1.37	234	195	289	216	12.70	12.00	11.50	10.70	2,972	2,340	3,324	2,314
Texas	387	379	386	386	1.40	1.00	1.15	1.01	542	379	444	389	10.40	11.90	12.00	11.90	5,637	4,510	5,328	4,633
Oklahoma	385	334	334	335	1.25	.80	1.05	1.37	481	267	351	458	7.40	8.00	8.40	7.30	3,559	2,136	2,948	3,340
Arkansas	286	298	314	296	1.23	1.15	1.35	1.05	352	343	424	311	12.00	13.00	11.00	10.80	4,224	4,459	4,664	3,358
Montana	640	605	595	549	1.90	2.00	1.40	2.00	1,216	1,210	833	1,100	8.30	10.00	12.50	10.00	10,093	12,100	10,412	10,999
Wyoming	452	400	360	339	1.90	2.10	2.40	1.83	859	840	864	619	8.60	10.30	12.50	8.90	7,387	8,652	10,810	5,512
Colorado	870	785	781	785	2.19	2.00	2.00	2.13	1,905	1,570	1,562	1,674	8.70	9.30	10.80	10.00	16,574	14,601	16,870	16,742
New Mexico	187	178	156	149	2.33	2.60	2.10	2.07	436	463	328	310	8.50	13.00	11.50	11.10	3,706	6,019	3,772	3,437
Arizona	113	104	94	88	3.40	3.86	2.10	2.60	384	401	197	228	12.00	12.00	13.00	12.80	4,608	4,812	2,561	2,916
Utah	368	350	340	334	2.78	2.50	3.00	2.65	1,023	875	1,020	886	8.00	9.00	9.00	9.00	8,184	7,875	9,180	7,974
Nevada	227	200	175	153	3.00	3.40	3.40	2.17	681	680	595	332	8.70	9.50	10.80	10.50	5,925	6,460	6,426	3,484
Idaho	692	672	630	611	2.80	3.10	3.00	2.35	1,938	2,088	1,890	1,438	6.30	7.60	9.00	9.10	12,209	15,831	17,010	13,082
Washington	776	739	717	703	2.20	2.40	2.10	1.88	1,707	1,774	1,506	1,319	10.10	12.00	15.70	14.00	17,241	21,288	23,644	18,470
Oregon	790	760	739	710	2.20	2.10	2.10	1.79	1,738	1,596	1,552	1,273	8.30	9.60	12.10	11.70	14,425	15,322	18,779	14,891
California	2,500	2,500	2,400	2,250	1.53	1.75	1.83	1.73	3,825	4,375	4,392	3,895	13.70	10.90	9.60	11.50	52,402	47,688	42,163	44,792
United States	49,530	48,240	51,015	51,041	1.47	1.14	1.36	1.35	72,691	54,916	69,378	68,833	11.79	14.29	12.14	10.50	856,695	784,926	842,252	722,401

---

*Census.

†Statistics by counties, showing acreage, average yield and total yield of Iowa farm crops compiled by the Iowa Department of Agriculture from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly will be found in part 3 of this year book.

ESTIMATED NUMBER, AVERAGE PRICE, AND TOTAL VALUE OF FARM ANIMALS IN THE UNITED STATES, JANUARY 1, 1913, WITH COMPARISONS.

Figures taken from February Number United States Crop Reporter.

State and Division	Horses						Mules						Milch Cows					
	Number Jan. 1, 1913		Average Price per Head Jan 1.			Total Value Jan. 1, 1913	Number Jan. 1, 1913		Average Price per Head Jan. 1			Total Value Jan. 1, 1913	Number Jan. 1, 1913		Average Price per Head Jan. 1			Total Value Jan. 1, 1913
	Percent*	Total	1913	1912	10 year average		Per cent*	Total	1913	1912	10-year average		Per cent*	Total	1913	1912	10-year average	
Maine	101	110,000	$139.00	$127.00	$104.00	$ 15,290,000							101	157,000	$46.00	$44.00	$33.20	$ 7,222,000
New Hampshire	100	46,000	123.00	126.00	98.00	5,658,000							99	96,000	48.00	44.00	35.70	4,608,000
Vermont	100	84,000	127.00	121.00	98.00	10,668,000							99	265,000	44.50	42.00	31.60	11,792,000
Massachusetts	100	64,000	146.00	144.00	115.00	9,344,000							97	165,000	51.00	50.00	41.80	8,415,000
Rhode Island	98	10,000	144.00	150.00	117.00	1,440,000							98	23,000	52.50	50.40	43.60	1,208,000
Connecticut	100	47,000	141.00	131.00	112.00	6,627,000							98	118,000	51.70	49.20	40.20	6,101,000
New York	100	609,000	137.00	133.00	111.00	83,433,000	101	4,000	$157.00	$150.00	$118.00	$628,000	98	1,465,000	50.00	43.30	37.20	73,250,000
New Jersey	99	90,000	147.00	143.00	118.00	13,230,000	101	4,000	169.00	160.00	130.00	676,000	97	146,000	55.20	53.20	41.50	8,059,000
Pennsylvania	101	578,000	133.00	130.00	110.00	76,874,000	101	41,000	140.00	147.00	121.00	6,556,000	100	943,000	46.60	43.70	36.60	43,944,000
N. Atlantic	100.4	1,628,000	135.88	131.77	109.77	222,561,000	101.6	57,000	151.15	148.23	121.41	7,860,000	98.8	3,378,000	48.73	44.38	37.11	164,599,000
Delaware	101	34,000	102.00	108.00	95.00	3,468,000	101	6,000	125.00	133.00	116.00	750,000	102	38,000	42.20	37.00	25.30	1,604,000
Maryland	100	163,000	116.00	112.00	93.00	18,908,000	101	23,000	142.00	140.00	117.00	3,266,000	101	168,000	42.60	37.00	32.60	7,157,000
Virginia	100	340,000	106.00	109.00	92.00	36,040,000	99	60,000	128.00	126.00	113.00	7,680,000	98	345,000	34.00	31.40	27.80	11,730,000
W. Virginia	101	184,000	116.00	113.00	93.00	21,344,000	99	12,000	126.00	122.00	100.00	1,512,000	100	230,000	42.00	33.80	31.60	9,660,000
N. Carolina	102	176,000	128.00	126.00	104.00	22,528,000	102	186,000	148.00	144.00	122.00	27,528,000	100	312,000	30.10	28.00	24.50	9,391,000
S. Carolina	101	83,000	140.00	135.00	113.00	11,620,000	101	168,000	171.00	165.00	137.00	28,728,000	100	185,000	32.50	32.30	27.60	6,012,000
Georgia	101	125,000	123.00	132.00	111.00	15,375,000	100	310,000	151.00	158.00	135.00	46,810,000	99	402,000	28.50	28.00	25.60	11,457,000
Florida	102	53,000	118.00	106.00	94.00	6,254,000	104	26,000	152.00	154.00	156.00	3,952,000	100	123,000	36.00	33.50	28.10	4,428,000
S. Atlantic	100.7	1,158,000	117.04	116.78	98.19	135,567,000	100.8	791,000	151.99	152.35	128.75	120,226,000	99.4	1,803,000	34.08	31.23	27.98	61,439,000
Ohio	99	892,000	130.00	126.00	108.00	115,960,000	101	24,000	131.00	127.00	106.00	3,144,000	98	869,000	50.00	42.00	37.10	43,450,000
Indiana	101	846,000	117.00	118.00	103.00	98,982,000	100	84,000	122.00	124.00	106.00	10,248,000	100	634,000	45.70	41.00	35.20	28,974,000
Illinois	99	1,482,000	120.00	115.00	103.00	117,840,000	99	149,000	131.00	123.00	108.00	19,519,000	96	1,007,000	51.00	45.50	37.50	51,357,000
Michigan	101	640,000	137.00	131.00	107.00	87,680,000	101	4,000	139.00	135.00	101.00	556,000	99	798,000	45.00	40.50	35.40	35,910,000
Wisconsin	102	665,000	131.00	124.00	103.00	87,115,000	102	3,000	131.00	125.00	96.00	393,000	100	1,504,000	47.70	40.40	33.40	71,741,000
N. C. E. Miss. R.	101.1	4,525,000	125.43	121.29	104.36	567,577,000	99.2	264,000	128.26	123.88	104.55	33,860,000	98.6	4,812,000	48.09	41.88	35.65	231,432,000

Minnesota	102	822,000	123.00	116.00	95.00	101,106,000	101	6,000	128.00	119.00	95.00	768,000	102	1,129,000	45.00	36.60	30.00	50,805,000
†Iowa	100	1,568,000	120.00	113.00	96.00	188,160,000	99	56,000	124.00	119.00	101.00	6,944,000	96	1,337,000	50.30	40.80	33.00	67,251,000
Missouri	99	1,084,000	101.00	102.00	86.00	109,484,000	98	326,000	117.00	115.00	99.00	38,142,000	96	789,000	45.30	40.20	30.50	35,742,000
North Dakota	103	712,000	124.00	114.00	92.00	88,288,000	101	8,000	141.00	127.00	105.00	1,128,000	102	277,000	47.00	37.00	30.70	13,019,000
South Dakota	104	702,000	105.00	92.00	80.00	73,710,000	105	14,000	118.00	108.00	90.00	1,652,000	105	384,000	48.00	38.00	29.60	18,132,000
Nebraska	97	1,027,000	101.00	91.00	82.00	103,727,000	99	84,000	112.00	106.00	95.00	9,408,000	99	607,000	49.60	40.60	31.00	30,107,000
Kansas	94	1,099,000	103.00	96.00	84.00	113,197,000	102	222,000	114.00	108.00	95.00	25,308,000	100	698,000	49.20	41.00	31.10	34,342,000
N. C. W. Miss. R.	99.3	7,014,000	110.87	103.62	88.18	777,672,000	99.4	716,000	116.41	112.18	97.51	83,350,000	99.1	5,221,000	47.83	39.44	31.11	249,698,000
Kentucky	100	443,000	104.00	107.00	89.00	46,072,000	98	229,000	120.00	118.00	101.00	27,180,000	98	390,000	38.80	35.30	29.20	15,132,000
Tennessee	99	350,000	115.00	114.00	93.00	40,250,000	99	276,000	129.00	123.00	105.00	35,604,000	95	361,000	33.10	32.00	25.00	12,115,000
Alabama	102	146,000	106.00	99.00	84.00	15,476,000	102	270,000	131.00	127.00	109.00	35,370,000	100	396,000	27.00	26.00	21.60	10,692,000
Mississippi	101	236,000	92.00	89.00	75.00	21,712,000	101	280,000	114.00	113.00	102.00	31,920,000	98	434,000	27.70	26.00	22.80	12,022,000
Louisiana	100	187,000	87.00	79.00	65.00	16,269,000	99	133,000	127.00	116.00	107.00	16,891,000	94	271,000	29.00	29.50	25.40	7,859,000
Texas	102	1,181,000	82.00	74.00	57.00	96,842,000	103	724,000	110.00	104.00	83.00	79,640,000	108	1,034,000	39.90	35.10	26.20	41,257,000
Oklahoma	101	758,000	84.00	76.00	66.00	63,672,000	99	269,000	107.00	98.00	89.00	28,783,000	96	484,000	43.00	35.40	27.20	20,812,000
Arkansas	102	270,000	89.00	86.00	70.00	24,030,000	102	233,000	115.00	110.00	94.00	26,795,000	97	392,000	28.60	27.00	20.50	11,211,000
S. Central	101.0	3,571,000	90.82	85.74	69.55	324,323,000	100.9	2,414,000	117.02	111.74	96.21	282,483,000	97.8	3,767,000	34.80	31.60	25.17	131,100,000
Montana	102	354,000	93.00	87.00	60.00	32,922,000	102	4,000	109.00	91.00	76.00	436,000	104	95,000	61.00	49.40	40.30	5,795,000
Wyoming	99	157,000	76.00	69.00	54.00	11,932,000	101	2,000	109.00	99.00	81.00	218,000	103	36,000	58.00	48.00	39.60	2,088,000
Colorado	101	324,000	87.00	80.00	64.00	28,188,000	102	17,000	104.00	100.00	84.00	1,768,000	103	172,000	53.80	47.00	36.60	9,254,000
New Mexico	103	191,000	58.00	50.00	37.00	11,078,000	103	15,000	90.00	86.00	63.00	1,350,000	105	56,000	47.80	43.00	36.40	2,677,000
Arizona	104	108,000	78.00	69.00	44.00	8,424,000	109	5,000	119.00	118.00	80.00	595,000	106	34,000	58.00	51.00	41.50	1,972,000
Utah	103	135,000	93.00	93.00	63.00	12,555,000	102	2,000	92.00	85.00	60.00	184,000	102	85,000	49.00	40.00	33.30	4,165,000
Nevada	104	75,000	87.00	77.00	65.00	6,525,000	101	3,000	95.00	82.00	73.00	285,000	102	20,000	52.00	50.00	41.10	1,040,000
Idaho	104	223,000	100.00	96.00	70.00	22,300,000	103	4,000	108.00	112.00	86.00	432,000	108	102,000	59.60	48.50	36.10	6,079,000
Washington	102	299,000	110.00	107.00	87.00	32,890,000	102	14,000	117.00	112.00	94.00	1,638,000	107	219,000	62.50	54.00	38.80	13,688,000
Oregon	101	292,000	99.00	102.00	80.00	28,908,000	102	10,000	107.00	111.00	86.00	1,070,000	104	187,000	56.00	47.20	35.40	10,472,000
California	102	503,000	109.00	117.00	89.00	51,827,000	102	73,000	130.00	136.00	103.00	9,490,000	101	510,000	53.50	53.00	39.70	27,285,000
Far Western	102.0	2,661,000	94.16	92.04	70.18	250,549,000	101.4	149,000	117.22	118.08	93.92	17,466,000	103.5	1,516,000	55.75	49.93	38.05	84,515,000
United States	100.3	20,567,000	110.77	105.94	88.94	2,278,222,000	100.6	1,386,000	124.31	120.51	103.09	545,245,000	99.0	20,497,000	45.02	39.39	32.55	922,783,000

---

*Compared with January 1, 1912.

†Statistics by counties, showing total figures on live stock, compiled by the Iowa Department of Agriculture, from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

ESTIMATED NUMBER, AVERAGE PRICE, AND TOTAL VALUE OF FARM ANIMALS IN THE UNITED STATES, JANUARY 1, 1913, WITH COMPARISONS.—Continued.

State and Division	Other Cattle						Sheep						Swine						
	Number Jan. 1, 1913		Average Price per Head Jan. 1			Total Value Jan. 1, 1913	Number Jan. 1, 1913		Average Price per Head Jan. 1			Total Value Jan. 1, 1913	Number Jan. 1, 1913		Average Price per Head Jan. 1			Total Value Jan. 1, 1913	Av age when marketed
	Per cent*	Total	1913	1912	10-year average		Per cent*	Total	1913	1912	10-year average		Per cent*	Total	1913	1912	10 year average		
Maine	101	99,000	$21.20	$19.80	$17.10	$ 2,099,000	100	186,000	$ 4.20	$ 4.10	$ 3.60	$ 781,000	100	101,000	$12.90	$11.50	$10.10	$ 1,303,000	9.0
New Hampshire	101	66,000	24.00	21.60	18.50	1,584,000	97	12,000	4.90	4.30	3.60	206,000	98	52,000	12.70	10.50	10.40	660,000	9.0
Vermont	100	168,000	18.30	18.20	15.00	3,074,000	100	117,000	4.60	4.30	3.80	538,000	96	107,000	12.20	10.00	9.10	1,305,000	9.0
Massachusetts	101	81,000	19.90	18.80	17.30	1,612,000	97	34,000	4.80	4.80	4.40	163,000	98	115,000	13.00	11.30	10.80	1,495,000	9.8
Rhode Island	99	11,000	20.60	20.00	18.70	227,000	100	7,000	5.10	4.60	4.20	36,000	90	14,000	14.50	12.00	11.40	203,000	9.8
Connecticut	100	71,000	22.50	21.00	19.50	1,598,000	100	21,000	5.20	4.60	4.70	109,000	97	58,000	14.00	11.60	11.70	812,000	9.5
New York	98	876,000	22.00	19.80	17.90	19,272,000	96	875,000	5.00	4.40	4.60	4,375,000	98	761,000	12.60	10.20	9.70	9,589,000	9.0
New Jersey	97	66,000	25.10	21.10	21.10	1,657,000	103	31,000	5.30	5.20	4.80	164,000	97	160,000	13.00	11.30	11.10	2,080,000	10.0
Pennsylvania	98	614,000	23.60	21.70	18.80	14,490,000	98	865,000	5.00	4.30	4.30	4,325,000	99	1,130,000	12.50	10.00	9.30	14,125,000	10.0
N. Atlantic	98.6	2,052,000	22.23	20.44	18.07	45,613,000	97.5	2,178,000	4.91	4.35	4.29	10,697,000	98.3	2,498,000	12.64	10.32	9.69	31,572,000	9.6
Delaware	101	19,000	23.80	22.00	19.70	452,000	102	8,000	4.70	4.30	4.20	38,000	98	58,000	11.20	7.20	8.30	650,000	10.0
Maryland	101	120,000	24.60	21.40	19.50	2,952,000	98	225,000	4.60	4.40	4.30	1,035,000	97	335,000	9.80	8.00	7.70	3,283,000	10.0
Virginia	96	459,000	23.20	19.90	18.40	10,649,000	96	750,000	4.00	3.60	3.60	3,000,000	95	836,000	7.00	6.30	5.70	5,852,000	11.0
West Virginia	100	331,000	29.00	22.10	21.30	9,599,000	98	821,000	4.30	3.90	3.80	3,530,000	98	356,000	9.00	6.70	6.50	3,204,000	11.6
North Carolina	98	372,000	14.90	12.60	11.60	5,543,000	94	181,000	3.10	2.80	2.40	561,000	95	1,335,000	7.70	7.40	5.90	10,280,000	11.6
South Carolina	100	215,000	14.20	13.20	11.70	3,053,000	99	34,000	2.80	2.80	2.30	95,000	96	765,000	8.50	8.00	6.40	6,502,000	12.5
Georgia	100	667,000	11.00	11.00	10.60	7,337,000	97	169,000	1.90	2.00	2.00	321,000	90	1,888,000	7.10	6.70	5.90	13,405,000	12.0
Florida	101	766,000	12.20	13.10	10.40	9,345,000	99	119,000	2.10	2.10	2.00	250,000	92	878,000	5.90	5.20	3.90	5,180,000	13.0
S. Atlantic	99.4	2,949,000	16.59	15.06	13.96	48,930,000	97.0	2,307,000	3.83	3.52	3.22	8,830,000	93.5	6,451,000	7.50	6.80	5.95	48,356,000	11.8
Ohio	92	814,000	29.80	24.30	22.20	24,257,000	93	3,435,000	4.10	3.40	4.00	14,084,000	95	3,399,000	10.80	8.20	7.80	36,709,000	9.5
Indiana	97	686,000	30.10	24.50	22.20	20,649,000	96	1,317,000	4.60	4.20	4.50	6,058,000	92	3,709,000	9.80	7.70	7.40	36,318,000	9.6
Illinois	97	1,228,000	31.50	26.60	23.90	38,682,000	97	1,036,000	5.10	4.40	4.60	5,284,000	93	4,315,000	10.50	8.80	8.20	45,308,000	10.0
Michigan	96	673,000	22.10	18.80	17.10	14,873,000	94	2,139,000	4.30	3.60	4.00	9,198,000	95	1,313,000	10.80	8.50	8.20	14,180,000	9.0
Wisconsin	99	1,135,000	21.70	18.00	15.20	24,630,000	97	822,000	4.50	3.90	3.80	3,699,000	99	2,030,000	11.60	9.60	8.80	23,548,000	9.1
N. C. E. Miss. R.	96.4	4,536,000	27.14	22.60	20.65	123,091,000	94.5	8,749,000	4.38	3.73	4.13	38,323,000	94.2	14,766,000	10.57	8.52	8.00	156,093,000	9.6

Minnesota	99	1,139,000	20.00	15.30	13.00	22,780,000	95	570,000	4.40	3.60	3.50	2,508,000	100	1,702,000	12.70	10.40	8.80	21,615,000	10.0
‡Iowa	94	2,607,000	33.00	25.00	22.30	86,031,000	101	1,249,000	5.10	4.30	4.50	6,370,000	90	8,720,000	12.00	9.80	8.60	104,640,000	10.7
Missouri	96	1,444,000	31.10	25.30	20.90	44,908,000	94	1,650,000	4.20	3.80	3.80	6,930,000	91	4,087,000	8.50	7.00	6.30	34,740,000	10.7
North Dakota	98	437,000	27.20	21.00	18.60	11,886,000	102	293,000	3.90	3.60	3.40	1,143,000	102	366,000	13.70	10.50	8.90	5,014,000	10.7
South Dakota	100	894,000	32.30	22.20	19.40	28,876,000	98	593,000	4.10	3.30	3.40	2,431,000	107	1,181,000	11.00	8.90	8.50	12,991,000	10.5
Nebraska	95	1,902,000	32.40	24.50	20.00	61,625,000	100	382,000	4.40	3.60	3.60	1,681,000	89	3,798,000	11.40	8.80	8.10	43,297,000	11.0
Kansas	95	1,778,000	33.40	26.40	21.40	59,385,000	97	316,000	4.60	3.80	3.80	1,454,000	93	2,611,000	10.40	7.90	7.60	27,154,000	10.5
N.C.W.Miss.R.	95.9	10,201,000	30.93	23.74	20.33	315,491,000	98.0	5,053,000	4.46	3.81	3.72	22,517,000	92.0	22,465,000	11.10	8.90	7.99	249,451,000	10.7
Kentucky	99	555,000	25.90	21.10	18.30	14,374,000	100	1,320,000	4.00	3.70	3.60	5,280,000	95	1,638,000	7.10	5.40	5.40	11,630,000	10.5
Tennessee	92	530,000	16.90	14.70	12.50	8,957,000	95	724,000	3.10	3.00	2.90	2,244,000	95	1,495,000	7.40	6.10	5.50	11,063,000	12.0
Alabama	99	535,000	10.10	9.60	8.40	5,404,000	94	132,000	2.10	2.20	2.00	277,000	95	1,456,000	6.80	6.50	5.20	9,901,000	13.0
Mississippi	92	521,000	10.40	10.00	8.80	5,418,000	97	208,000	2.20	2.20	1.90	458,000	94	1,482,000	6.90	6.50	5.10	10,226,000	13.0
Louisiana	86	444,000	12.00	11.20	10.40	5,328,000	97	171,000	2.00	2.00	1.90	342,000	86	1,412,000	7.00	5.80	5.10	9,884,000	15.0
Texas	97	5,022,000	22.60	17.00	13.20	113,497,000	102	2,073,000	2.90	2.80	2.50	6,012,000	98	2,493,000	8.40	6.30	5.60	20,941,000	12.6
Oklahoma	93	1,155,000	27.60	21.50	17.00	31,878,000	98	71,000	3.60	3.30	3.10	256,000	94	1,325,000	8.90	5.50	6.10	11,792,000	12.0
Arkansas	93	500,000	12.20	11.40	8.60	6,100,000	97	130,000	2.40	2.30	2.00	312,000	88	1,529,000	6.70	5.40	4.30	10,244,000	14.0
S. Central	95.3	9,262,000	20.62	16.24	13.28	190,956,000	99.6	4,829,000	3.14	3.00	2.64	15,181,000	93.4	12,830,000	7.46	5.95	5.35	95,681,000	12.7
Montana	98	717,000	38.40	29.80	23.00	27,533,000	102	5,111,000	3.70	3.30	3.30	18,911,000	107	153,000	11.90	9.90	9.60	1,821,000	11.0
Wyoming	89	506,000	38.80	28.80	23.50	19,633,000	90	4,472,000	4.10	2.80	3.30	18,335,000	95	41,000	11.00	8.60	8.80	451,000	12.0
Colorado	100	921,000	34.10	27.60	20.60	31,406,000	110	1,737,000	3.60	3.00	3.10	6,253,000	97	205,000	11.00	8.00	8.10	2,255,000	11.5
New Mexico	99	891,000	29.00	23.40	17.10	25,839,000	100	3,300,000	3.10	2.80	2.70	10,230,000	103	52,000	9.60	8.20	7.30	499,000	11.4
Arizona	105	778,000	29.20	23.30	18.20	22,718,000	104	1,570,000	3.70	4.30	3.20	5,809,000	103	23,000	11.50	10.50	8.10	264,000	11.5
Utah	99	352,000	28.50	21.50	18.10	10,032,000	100	1,990,000	4.10	3.80	3.30	8,159,000	102	81,000	11.00	9.00	8.20	891,000	10.5
Nevada	101	433,000	33.30	26.10	20.70	14,419,000	103	1,487,000	4.00	3.80	3.46	5,948,000	105	32,000	11.00	10.50	8.70	352,000	10.5
Idaho	99	340,000	33.50	25.50	19.30	11,390,000	100	2,951,000	4.00	3.60	3.30	11,804,000	110	233,000	10.30	8.00	7.60	2,400,000	11.7
Washington	100	186,000	30.50	24.40	19.20	5,673,000	103	501,000	4.20	3.50	3.40	2,104,000	105	258,000	11.30	9.50	8.50	2,915,000	10.0
Oregon	99	452,000	32.00	25.30	18.10	14,464,000	102	2,644,000	3.80	3.30	3.10	10,047,000	104	268,000	9.50	8.50	7.00	2,546,000	11.1
California	96	1,454,000	29.20	26.70	20.80	42,457,000	98	2,603,000	3.70	3.60	3.10	9,631,000	99	822,000	9.20	8.30	7.20	7,562,000	13.6
Far Western	98.3	7,030,000	32.09	26.03	20.24	225,564,000	99.6	28,366,000	3.78	3.31	3.19	107,231,000	102.1	2,168,000	10.13	8.60	7.64	21,956,000	12.0
United States	96.7	36,030,000	26.36	21.20	17.80	949,645,000	98.3	51,482,000	3.94	3.46	3.42	202,779,000	93.5	61,178,000	9.86	8.00	7.28	603,109,000	11.0

*Compared with January 1, 1912.

†Months.

‡Statistics by counties, showing total figures on live stock, compiled by the Iowa Department of Agriculture, from reports received, as required by Chapter 86, Section 1, Acts of the Thirty-third General Assembly, will be found in part 3 of this year book.

STATISTICS OF THE PRINCIPAL CROPS.

(Figures furnished by the Bureau of Statistics, United States Department of Agriculture, except where otherwise credited.)

CORN.

Corn crop of countries named, 1908–1912.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
NORTH AMERICA.					
United States	2,668,651,000	2,552,190,000	2,886,260,000	2,531,488,000	3,124,746,000
Canada:					
Ontario	21,742,000	18,211,000	17,858,000	18,001,000	16,047,000
Quebec	1,126,000	1,047,000	860,000	766,000	514,000
Mexico	150,000,000	170,000,000	190,766,000	190,000,000	(1)
Total	2,841,519,000	2,741,448,000	3,095,739,000	2,740,255,000	----------
SOUTH AMERICA.					
Argentina	136,055,000	177,155,000	175,187,000	27,675,000	295,838,000
Chile	1,344,000	1,178,000	1,378,000	1,221,000	(1)
Uruguay	4,004,000	6,671,000	6,514,000	3,643,000	(1)
Total	141,403,000	185,004,000	183,079,000	32,539,000	----------
EUROPE.					
Austria-Hungary:					
Austria	15,170,000	15,657,000	16,823,000	11,856,000	15,053,000
Hungary proper	146,122,000	161,860,000	187,733,000	137,421,000	181,045,000
Croatia-Slavonia	20,536,000	21,752,000	25,589,000	24,005,000	(1)
Bosnia-Herzegovina	8,821,000	10,972,000	10,051,000	8,416,000	8,555,000
Total Austria-Hungary	190,649,000	210,241,000	240,196,000	181,698,000	----------
Bulgaria	20,717,000	20,472,000	27,860,000	30,500,000	(1)
France	26,247,000	26,075,000	23,899,000	16,860,000	(1)
Italy	95,953,000	99,289,000	101,722,000	93,680,000	98,658,000
Portugal	15,000,000	15,000,000	15,000,000	15,000,000	(1)
Roumania	78,892,000	70,138,000	103,665,000	110,712,000	[illegible]
Russia:					
Russia proper	49,663,000	29,223,000	63,089,000	----------	(1)
Northern Caucasia	11,449,000	10,375,000	14,093,000	----------	(1)
Total Russia	61,112,000	39,598,000	77,182,000	(2) 82,286,000	(2) 79,954,000
Servia	21,010,000	34,453,000	33,204,000	26,531,000	(1)
Spain	20,115,000	26,433,000	27,366,000	28,730,000	25,069,000
Total	529,695,000	541,699,000	650,094,000	585,997,000	----------
AFRICA.					
Algeria	402,000	426,000	556,000	554,000	374,000
Egypt	65,000,000	65,000,000	70,294,000	67,903,000	69,913,000
Union of South Africa	20,000,000	20,000,000	20,000,000	20,000,000	(1)
Total	85,402,000	85,426,000	90,850,000	88,457,000	----------

---

(1) No official data received.
(2) Includes Asiatic Russia (10 Governments of).

STATISTICS OF THE PRINCIPAL CROPS.

CORN—Continued.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
AUSTRALASIA.					
Australia:					
Queensland	3,191,000	2,855,000	2,588,000	4,601,000	
New South Wales	4,671,000	5,380,000	7,322,000	7,833,000	
Victoria	525,000	671,000	1,195,000	1,013,000	
Western Australia	1,000	2,000	1,000	1,000	
South Australia			7,000	7,000	
Total	8,388,000	8,908,000	11,113,000	13,455,000	9,186,000
New Zealand	519,000	736,000	750,000	478,000	278,000
Total Australasia	8,907,000	9,644,000	11,863,000	13,933,000	9,464,000
Grand total	3,606,926,000	3,563,221,000	4,031,625,000	3,461,181,000	(3)

Total production of corn in "countries named" (the so-called "world crop"), 1894–1912.

[As compiled by the United States Department of Agriculture.]

Year	Production	Year	Production
1894	1,671,307,000	1904	3,109,252,000
1895	2,834,750,000	1905	3,461,181,000
1896	2,964,435,000	1906	3,963,645,000
1897	2,587,206,000	1907	3,420,321,000
1898	2,682,619,000	1908	3,606,926,000
1899	2,724,100,000	1909	3,563,221,000
1900	2,792,561,000	1910	4,031,625,000
1901	2,366,883,000	1911	3,461,181,000
1902	3,187,311,000	1912	
1903	3,066,506,000		

(3) Total of countries whence returns have been received in 1912 is 4,016,750,000 bushels, against 3,133,421,000 bushels for same countries in 1911.

STATISTICS OF THE PRINCIPAL CROPS—Continued.

WHEAT.

Wheat crop of countries named, 1908–1912.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
NORTH AMERICA.					
United States	664,602,000	683,350,000	635,121,000	621,338,000	730,267,000
Canada:					
New Brunswick	349,000	395,000	371,000	270,000	225,000
Ontario	18,057,000	16,262,000	17,805,000	19,252,000	13,638,000
Manitoba	50,269,000	52,706,000	41,159,000	60,275,000	58,899,000
Saskatchewan	34,742,000	85,197,000	81,139,000	97,665,000	93,849,000
Alberta	6,842,000	9,579,000	6,593,000	36,143,000	30,574,000
Other	2,175,000	2,605,000	2,923,000	2,313,000	2,051,000
Total Canada	112,434,000	166,744,000	149,990,000	215,918,000	199,236,000
Mexico	10,000,000	10,000,000	11,976,000	12,000,000	12,000,000
Total	787,036,000	860,094,000	797,087,000	849,256,000	941,503,000
SOUTH AMERICA.					
Argentina	192,487,000	156,162,000	131,010,000	145,981,000	166,190,000
Chile	18,915,000	17,671,000	19,682,000	18,184,000	20,000,000
Uruguay	7,430,000	8,595,000	7,750,000	6,009,000	8,757,000
Total	218,832,000	182,428,000	158,442,000	170,174,000	194,947,000
EUROPE.					
Austria-Hungary:					
Austria	62,129,000	58,477,000	58,213,000	58,865,000	69,712,000
Hungary proper	152,204,000	113,352,000	169,700,000	174,888,000	169,510,000
Croatia-Slavonia	13,220,000	11,662,000	11,434,000	15,881,000	14,855,000
Bosnia-Herzegovina	3,023,000	2,594,000	2,671,000	2,941,000	2,993,000
Total Austria-Hungary	230,576,000	186,085,000	242,018,000	252,575,000	257,070,000
Belgium	13,393,000	14,603,000	12,449,000	14,616,000	15,000,000
Bulgaria	36,496,000	32,071,000	42,247,000	48,000,000	45,000,000
Denmark	4,318,000	3,829,000	4,547,000	4,469,000	4,000,000
Finland	111,000	134,000	125,000	125,000	130,000
France	317,765,000	356,193,000	257,667,000	315,126,000	334,871,000
Germany	138,440,000	137,999,000	141,884,000	149,411,000	160,224,000
Greece	8,000,000	7,000,000	7,000,000	8,000,000	7,000,000
Italy	152,236,000	190,378,000	153,403,000	192,395,000	165,720,000
Montenegro	200,000	200,000	200,000	200,000	200,000
Netherlands	5,121,000	4,158,000	4,441,000	5,511,000	4,500,000
Norway	333,000	313,000	294,000	271,000	332,000
Portugal	8,000,000	8,000,000	9,000,000	11,850,000	7,500,000
Roumania	54,813,000	56,751,000	110,761,000	93,724,000	83,924,000
Russia:					
Russia proper	383,016,000	586,819,000	552,067,000	------------	------------
Poland	21,182,000	21,194,000	22,757,000	------------	------------
Northern Caucasia	84,964,000	103,465,000	124,589,000	------------	------------
Total Russia (European)	489,162,000	711,478,000	699,413,000	447,016,000	623,728,000

STATISTICS OF THE PRINCIPAL CROPS—Continued.

WHEAT—Continued.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
EUROPE—Cont.					
Servia	11,495,000	16,126,000	15,561,000	15,312,000	14,000,000
Spain	119,970,000	144,105,000	137,448,000	148,495,000	109,783,000
Sweden	6,756,000	6,978,000	7,450,000	7,945,000	7,832,000
Switzerland	3,527,000	3,568,000	2,756,000	3,524,000	3,000,000
Turkey (European)	19,462,000	20,000,000	20,000,000	20,000,000	18,000,000
United Kingdom:					
England	51,371,000	60,121,000	53,464,000	60,729,000	54,249,000
Wales	966,000	1,147,000	1,122,000	1,118,000	1,124,000
Scotland	1,854,000	2,111,000	2,020,000	2,786,000	2,472,000
Ireland	1,438,000	1,809,000	1,716,000	1,656,000	1,564,000
Total United Kingdom	55,629,000	65,188,000	58,322,000	66,289,000	59,409,000
Total	1,675,803,000	1,965,157,000	1,926,986,000	1,804,854,000	1,926,223,000
ASIA.					
British India including such native States as report	228,670,000	285,189,000	359,654,000	374,845,000	366,370,000
Cyprus	2,556,000	1,912,000	2,169,000	2,394,000	2,000,000
Japanese Empire:					
Japan	22,587,000	22,966,000	24,487,000	25,645,000	25,000,000
Formosa	200,000	200,000	200,000	200,000	200,000
Total Japanese Empire	22,787,000	23,166,000	24,687,000	25,845,000	25,200,000
Persia	16,000,000	16,000,000	16,000,000	16,000,000	16,000,000
Russia:					
Central Asia	21,416,000	26,429,000	24,009,000	--------------	--------------
Siberia	55,755,000	45,269,000	52,140,000	--------------	--------------
Transcaucasia	66,000	94,000	133,000	--------------	--------------
Total Russia (Asiatic)	77,237,000	71,792,000	76,282,000	62,475,000	103,283,000
Turkey (Asia Minor only)	35,000,000	35,000,000	35,000,000	35,000,000	35,000,000
Total	382,250,000	433,059,000	513,792,000	516,559,000	547,853,000
AFRICA.					
Algeria	31,260,000	29,739,000	35,722,000	35,874,000	27,507,000
Egypt	30,000,000	30,000,000	32,623,000	38,046,000	32,000,000
Tunis	3,674,000	6,430,000	5,512,000	8,635,000	4,225,000
Union of South Africa	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
Total	67,434,000	68,669,000	76,357,000	85,055,000	66,232,000
AUSTRALASIA.					
Australia:					
Queensland	715,000	1,241,000	1,621,000	1,055,000	294,000
New South Wales	9,444,000	15,971,000	29,431,000	28,793,000	25,879,000
Victoria	12,482,000	24,081,000	29,687,000	35,910,000	21,550,000
South Australia	19,739,000	20,009,000	25,926,000	25,112,000	20,994,000
Western Australia	3,018,000	2,538,000	5,779,000	6,083,000	4,496,000
Tasmania	665,000	723,000	819,000	1,156,000	681,000
Total Australia	46,063,000	64,563,000	93,263,000	98,109,000	73,894,000
New Zealand	5,743,000	9,049,000	9,008,000	8,535,000	8,000,000
Total Australasia	51,806,000	73,612,000	102,271,000	106,644,000	81,894,000
Grand total	3,183,161,000	3,583,019,000	3,574,935,000	3,532,542,000	3,758,652,000

STATISTICS OF THE PRINCIPAL CROPS—Continued.

WHEAT—Continued.

Total production of wheat in "countries named" (the so-called "world crop"), 1891-1912.

[As compiled by the United States Department of Agriculture.]

Year	Production	Year	Production
	Bushels		Bushels
1891	2,432,322,000	1902	3,090,116,000
1892	2,481,805,000	1903	3,189,813,000
1893	2,559,174,000	1904	3,163,542,000
1894	2,660,557,000	1905	3,327,084,000
1895	2,593,312,000	1906	3,434,354,000
1896	2,506,320,000	1907	3,133,965,000
1897	2,236,268,000	1908	3,183,161,000
1898	2,948,305,000	1909	3,583,019,000
1899	2,783,885,000	1910	3,574,935,000
1900	2,640,751,000	1911	3,532,542,000
1901	2,955,975,000	1912	3,758,652,000

STATISTICS OF THE PRINCIPAL CROPS—Continued.

OATS.

Oat crop of countries named, 1908-1912.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
NORTH AMERICA.					
United States	807,156,000	1,007,129,000	1,186,341,000	922,298,000	1,418,337,000
Canada:					
New Brunswick	5,057,000	5,775,000	6,351,000	5,727,000	5,359,000
Quebec	35,478,000	42,501,000	48,927,000	37,512,000	30,267,000
Ontario	103,821,000	109,192,000	128,917,000	82,679,000	91,899,000
Manitoba	44,711,000	56,267,000	41,742,000	57,893,000	53,806,000
Saskatchewan	29,205,000	91,796,000	61,367,000	97,962,000	105,115,000
Alberta	22,802,000	38,376,000	23,644,000	56,964,000	62,936,000
Other	9,303,000	10,559,000	12,501,000	9,849,000	12,351,000
Total Canada	250,377,000	353,466,000	323,449,000	348,586,000	361,733,000
Mexico	17,000	17,000	17,000	17,000	17,000
Total	1,057,550,000	1,360,612,000	1,509,807,000	1,270,901,000	1,780,087,000
SOUTH AMERICA.					
Argentina	33,949,000	31,984,000	36,483,000	47,192,000	69,169,000
Chile	1,817,000	2,373,000	2,611,000	1,861,000	2,000,000
Uruguay	239,000	462,000	400,000	590,000	1,825,000
Total	36,005,000	34,819,000	39,494,000	49,643,000	72,994,000
EUROPE.					
Austria-Hungary:					
Austria	144,069,000	148,825,000	126,548,000	135,143,000	146,376,000
Hungary proper	70,168,000	92,270,000	70,701,000	89,656,000	77,521,000
Croatia-Slavonia	4,253,000	5,607,000	5,445,000	6,442,000	6,224,000
Bosnia-Herzegovina	3,572,000	4,575,000	5,322,000	5,405,000	4,762,000
Total Austria-Hungary	222,062,000	251,277,000	208,016,000	236,646,000	234,883,000
Belgium	43,058,000	43,231,000	35,000,000	40,000,000	38,000,000
Bulgaria	11,252,000	9,356,000	10,789,000	12,000,000	11,500,000
Denmark	40,437,000	42,170,000	40,596,000	41,188,000	42,000,000
Finland	18,321,000	19,759,000	18,000,000	22,642,000	26,618,000
France	285,837,000	331,183,000	290,776,000	303,328,000	328,601,000
Germany	530,126,000	628,712,000	544,287,000	530,764,000	586,987,000
Italy	30,000,000	43,402,000	28,574,000	40,973,000	28,306,000
Netherlands	19,683,000	19,361,000	18,039,000	17,724,000	16,000,000
Norway	11,315,000	8,804,000	10,488,000	8,593,000	11,607,000
Roumania	17,212,000	25,945,000	29,647,000	26,222,000	20,775,000
Russia:					
Russia proper	743,523,000	960,498,000	869,736,000	-------------	-------------
Poland	66,135,000	73,758,000	65,510,000	-------------	-------------
Northern Caucasia	24,860,000	33,428,000	31,002,000	-------------	-------------
Total Russia (European)	834,518,000	1,067,684,000	966,248,000	792,902,000	972,111,000
Servia	3,057,000	5,810,000	5,364,000	5,050,000	4,750,000
Spain	28,114,000	34,307,000	29,018,000	33,858,000	23,035,000
Sweden	72,773,000	69,292,000	75,238,000	63,462,000	75,900,000

STATISTICS OF THE PRINCIPAL CROPS—Continued.

OATS—Continued.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
EUROPE—Cont.					
United Kingdom:					
England	82,470,000	80,573,000	80,225,000	74,119,000	68,708,000
Wales	7,133,000	7,233,000	8,018,000	7,087,000	7,040,000
Scotland	37,920,000	39,097,000	37,425,000	36,757,000	37,600,000
Ireland	54,032,000	57,467,000	65,770,000	59,207,000	66,867,000
Total United Kingdom	181,555,000	184,370,000	191,438,000	177,170,000	180,215,000
Total	2,349,320,000	2,784,663,000	2,501,518,000	2,352,522,000	2,601,288,000
ASIA.					
Cyprus	382,000	385,000	515,000	466,000	500,000
Russia:					
Central Asia	17,371,000	15,633,000	12,812,000	----------	----------
Siberia	89,500,000	62,033,000	66,874,000	----------	----------
Transcaucasia	27,000	37,000	57,000	----------	----------
Total Russia (Asiatic)	106,898,000	77,703,000	79,743,000	65,454,000	95,473,000
Total	107,280,000	78,088,000	80,258,000	65,920,000	95,973,000
AFRICA.					
Algeria	10,651,000	9,600,000	13,306,000	11,520,000	12,287,000
Tunis	1,736,000	5,443,000	5,374,000	4,650,000	2,067,000
Union of South Africa	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000
Total	15,887,000	18,543,000	22,180,000	19,670,000	17,854,000
AUSTRALASIA.					
Australia:					
Queensland	10,000	40,000	52,000	52,000	----------
New South Wales	879,000	1,154,000	2,029,000	1,756,000	----------
Victoria	5,365,000	11,475,000	8,163,000	10,005,000	----------
South Australia	902,000	1,320,000	1,247,000	1,172,000	----------
Western Australia	745,000	765,000	1,287,000	801,000	----------
Tasmania	1,574,000	1,900,000	2,422,000	2,128,000	----------
Total Australia	9,475,000	16,654,000	15,200,000	15,914,000	9,863,000
New Zealand	15,495,000	19,503,000	13,935,000	10,412,000	20,000,000
Total Australasia	24,970,000	36,157,000	29,153,000	26,326,000	29,863,000
Grand total	3,591,012,000	4,312,882,000	4,182,410,000	3,784,982,000	4,598,059,000

STATISTICS OF THE PRINCIPAL CROPS—Continued.

BARLEY.

Barley crop of countries named, 1908-1912.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
NORTH AMERICA.					
United States	166,756,000	173,321,000	173,832,000	160,240,000	223,824,000
Canada:					
New Brunswick	79,000	94,000	73,000	74,000	69,000
Quebec	2,170,000	2,604,000	2,547,000	2,413,000	2,163,000
Ontario	21,124,000	20,952,000	20,727,000	13,760,000	14,745,000
Manitoba	17,093,000	20,866,000	13,826,000	14,447,000	14,965,000
Saskatchewan	1,952,000	4,493,000	3,598,000	5,445,000	5,926,000
Alberta	3,881,000	5,999,000	3,953,000	4,151,000	5,780,000
Other	463,000	390,000	424,000	341,000	366,000
Total Canada	46,762,000	55,398,000	45,148,000	40,631,000	44,014,000
Mexico	7,000,000	7,000,000	6,329,000	6,500,000	6,500,000
Total	220,518,000	235,719,000	225,309,000	207,371,000	274,338,000
EUROPE.					
Austria-Hungary:					
Austria	69,497,000	75,565,000	64,932,000	69,383,000	74,145,000
Hungary proper	56,324,000	71,868,000	53,630,000	73,595,000	70,173,000
Croatia-Slavonia	2,552,000	2,394,000	2,732,000	3,146,000	2,816,000
Bosnia-Herzegovina	2,389,000	3,755,000	3,787,000	2,970,000	2,857,000
Total Austria-Hungary	130,762,000	153,582,000	125,081,000	149,094,000	149,991,000
Belgium	4,409,000	4,574,000	3,748,000	4,595,000	4,000,000
Bulgaria	11,311,000	9,322,000	14,083,000	16,000,000	15,000,000
Denmark	20,166,000	21,599,000	21,793,000	21,016,000	22,000,000
Finland	5,131,000	4,887,000	5,000,000	6,631,000	6,754,000
France	40,673,000	46,144,000	43,477,000	47,631,000	50,646,000
Germany	140,538,000	160,551,000	133,330,000	145,132,000	159,924,000
Italy	9,000,000	10,951,000	9,483,000	10,882,000	8,403,000
Netherlands	3,953,000	3,332,000	3,104,000	3,416,000	4,000,000
Norway	3,028,000	2,596,000	2,900,000	2,550,000	3,086,000
Roumania	12,873,000	19,955,000	29,359,000	26,157,000	21,295,000
Russia:					
Russia proper	297,449,000	382,163,000	368,840,000	----------	----------
Poland	23,790,000	26,671,000	21,959,000	----------	----------
Northern Caucasia	46,219,000	55,900,000	62,709,000	----------	----------
Total Russia (European)*	367,458,000	464,734,000	453,508,000	401,228,000	451,861,000
Servia	3,351,000	6,314,000	6,795,000	4,609,000	4,000,000
Spain	69,596,000	81,579,000	76,308,000	86,792,000	59,994,000
Sweden	15,520,000	13,900,000	14,763,000	13,725,000	13,660,000
United Kingdom:					
England	46,353,000	52,323,000	48,777,000	43,378,000	42,951,000
Wales	2,682,000	2,804,000	2,896,000	2,729,000	2,839,000
Scotland	7,410,000	7,731,000	6,578,000	6,488,000	7,115,000
Ireland	7,064,000	8,258,000	6,846,000	7,099,000	7,259,000
Total United Kingdom	63,509,000	71,116,000	65,097,000	59,694,000	60,164,000
Total	901,278,000	1,075,136,000	1,007,829,000	999,152,000	1,034,778,000

---

*Exclusive of winter barley.

STATISTICS OF THE PRINCIPAL CROPS—Continued.

BARLEY—Continued.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
ASIA.					
Cyprus	2,613,000	2,469,000	2,121,000	2,229,000	2,000,000
Japanese Empire:					
Japan	87,138,000	87,185,000	81,953,000	86,468,000	87,500,000
Formosa	34,000	34,000	44,000	50,000	50,000
Total Japanese Empire	87,172,000	87,219,000	81,997,000	86,518,000	87,550,000
Russia:					
Central Asia	4,345,000	4,099,000	4,630,000	--------------	--------------
Siberia	6,103,000	4,775,000	5,511,000	--------------	--------------
Transcaucasia	13,000	10,000	29,000	--------------	--------------
Total Russia (Asiatic)*	10,461,000	8,884,000	10,170,000	10,006,000	12,263,000
Total	100,246,000	98,572,000	94,288,000	98,753,000	101,813,000
AFRICA.					
Algeria	41,543,000	31,511,000	47,790,000	47,588,000	32,887,000
Tunis	5,057,000	9,186,000	6,660,000	13,319,000	4,823,000
Union of South Africa	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Total	49,600,000	43,697,000	57,450,000	63,907,000	40,710,000
AUSTRALASIA.					
Australia:					
Queensland	67,000	142,000	200,000	86,000	--------------
New South Wales	77,000	172,000	281,000	85,000	--------------
Victoria	1,093,000	1,706,000	1,056,000	1,383,000	--------------
South Australia	585,000	852,000	713,000	562,000	--------------
Western Australia	79,000	77,000	105,000	35,000	--------------
Tasmania	154,000	190,000	158,000	147,000	--------------
Total Australia	2,055,000	3,139,000	2,513,000	2,298,000	1,370,000
New Zealand	1,200,000	2,000,000	1,345,000	950,000	1,000,000
Total Australasia	3,255,000	5,139,000	3,858,000	3,248,000	2,370,000
Grand total	1,274,897,000	1,458,263,000	1,388,734,000	1,372,431,000	1,454,009,000

*Exclusive of winter barley.

STATISTICS OF THE PRINCIPAL CROPS—Continued.

RYE.

Rye crop of countries named, 1908-1912.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
NORTH AMERICA.					
United States	31,851,000	29,520,000	34,897,000	33,119,000	35,664,000
Canada:					
Quebec	325,000	335,000	308,000	321,000	296,000
Ontario	1,030,000	1,097,000	923,000	1,766,000	1,746,000
Manitoba	101,000	75,000	92,000	------------	------------
Saskatchewan	41,000	38,000	49,000	------------	------------
Alberta	200,000	152,000	162,000	564,000	537,000
Other	14,000	18,000	10,000	18,000	15,000
Total Canada	1,711,000	1,715,000	1,544,000	2,669,000	2,594,000
Mexico	70,000	70,000	70,000	70,000	70,000
Total	33,632,000	31,305,000	36,511,000	35,858,000	38,328,000
EUROPE.					
Austria-Hungary:					
Austria	113,309,000	117,279,000	112,497,000	105,269,000	119,620,000
Hungary proper	45,185,000	44,858,000	49,686,000	50,353,000	53,019,000
Croatia-Slavonia	2,520,000	2,393,000	2,318,000	2,674,000	2,524,000
Bosnia-Herzegovina	298,000	368,000	394,000	379,000	450,000
Total Austria-Hungary	161,312,000	164,898,000	164,895,000	158,675,000	175,613,000
Belgium	22,199,000	23,154,000	22,085,000	23,089,000	22,500,000
Bulgaria	5,604,000	6,906,000	9,045,000	12,000,000	10,000,000
Denmark	19,170,000	18,922,000	19,564,000	19,286,000	18,000,000
Finland	11,195,000	12,085,000	11,000,000	10,153,000	12,344,000
France	51,703,000	54,934,000	44,064,000	45,894,000	50,936,000
Germany	422,688,000	446,763,000	413,802,000	427,776,000	456,600,000
Italy	5,000,000	5,032,000	5,439,000	5,297,000	5,285,000
Netherlands	15,866,000	17,652,000	15,357,000	16,110,000	16,000,000
Norway	869,000	1,011,000	896,000	948,000	1,042,000
Roumania	2,640,000	3,090,000	7,885,000	4,989,000	3,583,000
Russia:					
Russia proper	673,736,000	783,055,000	750,316,000	------------	------------
Poland	77,954,000	86,775,000	83,573,000	------------	------------
Northern Caucasia	6,993,000	7,335,000	9,811,000	------------	------------
Total Russia (European)	758,683,000	877,165,000	843,700,000	742,376,000	1,011,029,000
Servia	974,000	1,754,000	1,513,000	1,711,000	1,500,000
Spain	26,412,000	34,901,000	27,596,000	28,897,000	18,867,000
Sweden	26,052,000	25,728,000	24,154,000	23,825,000	23,323,000
United Kingdom	1,776,000	1,954,000	1,800,000	1,750,000	1,500,000
Total	1,532,143,000	1,695,949,000	1,612,795,000	1,522,776,000	1,828,122,000
ASIA.					
Russia:					
Central Asia	1,326,000	1,498,000	1,011,000	------------	------------
Siberia	22,775,000	18,152,000	22,895,000	------------	------------
Transcaucasia	9,000	18,000	22,000	------------	------------
Total Russia (Asiatic)	24,110,000	19,668,000	23,928,000	19,731,000	32,953,000

STATISTICS OF THE PRINCIPAL CROPS—Continued.

RYE—Continued.

Country	1908	1909	1910	1911	1912
	Bushels	Bushels	Bushels	Bushels	Bushels
AUSTRALASIA.					
Australia:					
Queensland	1,000	1,000	3,000	2,000	
New South Wales	56,000	51,000	66,000	59,000	
Victoria	22,000	33,000	27,000	30,000	
South Australia			15,000	8,000	
Western Australia	5,000	4,000	10,000	6,000	
Tasmania	15,000	18,000	18,000	24,000	
Total Australia	99,000	107,000	139,000	129,000	58,000
New Zealand	73,000	94,000	100,000	109,000	90,000
Total Australasia	172,000	201,000	239,000	238,000	148,000
Grand total	1,590,057,000	1,747,123,000	1,673,473,000	1,578,603,000	1,899,551,000

Total production of rye in "countries named" (the so-called "world crop"), 1895-1912.

[As compiled by the United States Department of Agriculture.]

Year	Production	Year	Production
	Bushels		
1895	1,468,212,000		Bushels
1896	1,499,250,000	1905	1,495,751,000
1897	1,300,645,000	1906	1,433,395,000
1898	1,461,171,000	1907	1,538,778,000
1899	1,583,179,000	1908	1,590,057,000
1900	1,557,634,000	1909	1,747,123,000
1901	1,416,022,000	1910	1,673,473,000
1902	1,647,845,000	1911	1,578,603,000
1903	1,659,961,000	1912	1,899,551,000
1904	1,742,112,000		

STATISTICS OF THE PRINCIPAL CROPS—Continued.

FLAX.

Flax crop of countries named, 1909-1911.

Country.	Seed.			Fiber.		
	1909	1910	1911	1909	1910	1911
NORTH AMERICA.	Bushels	Bushels	Bushels	Pounds	Pounds	Pounds
United States	19,513,000	12,718,000	19,370,000	----------	----------	----------
Canada:						
Quebec	----------	----------	19,000	----------	----------	----------
Ontario	----------	----------	118,000	----------	----------	----------
Manitoba	317,000	290,000	899,000	----------	----------	----------
Saskatchewan	1,787,000	3,448,000	6,413,000	----------	----------	----------
Alberta	109,000	64,000	418,000	----------	----------	----------
Total	2,213,000	3,802,000	7,867,000	----------	----------	----------
Mexico	150,000	150,000	150,000	----------	----------	----------
Total North America	21,876,000	16,670,000	27,387,000	----------	----------	----------
SOUTH AMERICA.						
Argentina	41,291,000	28,212,000	23,424,000	----------	----------	----------
Uruguay	522,000	600,000	660,000	----------	----------	----------
Total	41,813,000	28,812,000	24,084,000	----------	----------	----------
EUROPE.						
Austria-Hungary:						
Austria	852,000	663,000	697,000	68,136,000	50,191,000	46,646,000
Hungary proper	186,000	164,000	170,000	20,118,000	18,492,000	19,000,000
Croatia-Slavonia	30,000	30,000	30,000	9,000,000	8,143,000	8,000,000
Bosnia-Herzegovina	4,000	4,000	4,000	1,400,000	1,000,000	1,000,000
Total Austria-Hungary	1,072,000	861,000	901,000	98,654,000	77,826,000	74,646,000
Belgium	300,000	300,000	300,000	27,000,000	28,000,000	28,000,00
Bulgaria	2,000	8,000	10,000	200,000	709,000	800,000
France	436,000	416,000	496,000	30,494,000	33,106,000	45,004,000
Italy	281,000	232,000	341,000	7,242,000	6,883,000	6,078,000
Netherlands	219,000	316,000	374,000	13,438,000	14,189,000	20,929,000
Roumania	205,000	363,000	603,000	1,628,000	4,448,000	4,000,000
Russia:						
Russia proper	19,767,000	16,743,000	----------	1,022,484,000	----------	----------
Poland	948,000	816,000	----------	42,450,000	----------	----------
North Caucasia	583,000	590,000	----------	26,130,000	----------	----------
Total Russia (European)	21,298,000	18,149,000	21,000,000	1,091,064,000	[†]702,477,000	1,034,000,000
Servia	----------	----------	----------	872,000	2,192,000	2,091,000
Sweden	21,000	20,000	17,000	1,449,000	1,400,000	1,500,000
Ireland	----------	----------	----------	16,081,000	19,882,000	25,179,000
Total	23,834,000	20,665,000	24,042,000	1,288,122,000	891,112,000	1,242,227,000

[†] Includes Asiatic Russia.

STATISTICS OF THE PRINCIPAL CROPS—Continued.

FLAX—Continued.

Country.	Seed.			Fiber.		
	1909	1910	1911	1909	1910	1911
ASIA.	Bushels	Bushels	Bushels	Pounds	Pounds	Pounds
British India	11,552,000	17,112,000	22,544,000	----------	----------	----------
Russia:						
Central Asia	966,000	429,000	----------	51,864,000	----------	----------
Siberia	771,000	832,000	----------	38,109,000	----------	----------
Transcaucasia	107,000	----------	----------	6,429,000	----------	----------
Total Russia (Asiatic)	1,844,000	1,261,000	887,000	96,402,000	(‡)	49,000,000
Total Asia	13,396,000	18,373,000	23,431,000	96.402,000	----------	49,000,000
AFRICA.						
Algeria	8,000	4,000	16,000	----------	----------	----------
Grand total	100,927,000	84,524,000	98,960,000	1,384,524,000	891,112,000	1,291,227,000

‡Included in European Russia.

PART III

Crop and Other Statistics for the Year Ending December 31, 1912, Collected by Township Assessors

The statistics collected by township assessors under the provisions of chapter 86, acts of the thirty-third general assembly, are presented in this chapter. These statistics are gathered by the assessors direct from the farms and turned in to the county auditor who tabulates them and forwards them to the office of the secretary of the state board of agriculture. There is naturally some variation in these figures as compared to those shown by the Iowa Weather and Crop Service, whose reports are secured from estimates made by the crop reporters over the state.

Table No. 1. Gives the total number, average size and total acreage of farms, total acreage occupied by farm buildings, public highways and feed lots, acreage in pasture, garden, orchard, crops not otherwise enumerated and land not utilized for any purpose. It also shows the total number of bushels of apples harvested, number of silos on farms and average monthly wages paid farm help, summer and winter months by counties, for the year 1912.

Table No. 2. This gives the acreage, yield per acre and total yield of corn, oats, winter wheat, spring wheat and barley by counties for the year 1912.

Table No. 3. This table shows the acreage, yield per acre and total yield of rye, tame hay, wild hay, alfalfa, potatoes and flax seed, by counties, for the year 1912.

Table No. 4. The figures on live stock are given in this table showing the number of horses of all ages and mules all ages on the farms January 1, 1913, and the number of swine July 1, 1912; the number of dairy cows kept for milk, number of other cattle not kept for milk and total number of cattle all ages on farms January 1, 1913; the number of sheep kept on the farms, the number shipped in for feeding and the number sold for slaughter; the total number of pounds of wool clipped; the total number of all varieties of poultry on farms July 1, 1912, and the estimated number of dozen of eggs gathered for the year 1912.

Table No. 5. Gives the total acreage of sweet corn, the tons gathered for canning, total acreage of pop corn and yield in bushels and the total acreage and yield in bushels of timothy seed and clover seed.

The following is a brief summary showing acreage, production, average yield per acre and total value of Iowa farm products for the year 1912.

1912—TABULATED CROP SUMMARY—1912

	Acreage	Production	Average per acre	Average farm price Dec. 1, '12	Value per acre	Total Value
Corn	9,420,434	419,097,329 bu.	44.5	$ .36	$ 16.02	$ 150,875,038.44
Oats	4,874,752	207,819,162 bu.	42.6	.27	11.50	56,111,173.74
Winter wheat	497,938	11,460,943 bu.	23	.78	17.94	8,939,535.54
Spring wheat	389,371	5,702,539 bu.	14.6	.76	11.09	4,333,929.64
Barley	389,410	11,100,558 bu.	28.5	.50	14.25	5,550,279.00
Rye	73,315	1,322,382 bu.	18	.61	10.98	806,653.02
Potatoes	120,035	11,277,537 bu.	93.9	.44	41.31	4,962,116.28
Flax seed	24,121	238,442 bu.	9.88	1.31	12.94	312,359.02
Hay (Tame)	2,635,744	3,138,940 T.	1.2	9.89	11.86	31,044,116.60
Hay (Wild)	754,374	836,735 T.	1.1	7.43	8.17	6,216,941.05
Alfalfa	46,644	105,936 T.	2.3	11.00	25.3	1,165,296.00
Miscellaneous crops	104,708	Estimated				7,500,000.00
Timothy seed	514,212	Estimated				2,300,000.00
Clover seed	44,237	Estimated				516,736.00
Pop corn	19,265	Estimated				600,000.00
Sweet corn	34,269	Estimated				1,137,500.00
Garden truck	45,793	Estimated				1,500,000.00
Orchards	134,735	Estimated				5,500,000.00
Pasturage	8,968,644	Estimated				85,000,000.00
Ensilage						4,000,000.00
Total value farm crops						$ 378,371,674.33
Wool		Estimated				1,500,000.00
Dairy products		Estimated				53,000,000.00
Poultry and eggs		Estimated				30,000,000.00
Total val. farm products						$ 462,871,674.33

TABLE NO. 1

Total number, average size and total acreage of farms, total acreage occupied by farm buildings, public highways and feed lots, acreage in pasture, garden, orchard, crops not otherwise enumerated and land not utilized for any purpose. Total number bushels apples harvested, number silos on farms and average monthly wage paid farm help, summer and winter months, by counties, for the year 1912.

Counties	Number of farms	Average size of farms	Total acreage of farms	Total No. acres occupied by farm buildings, public highways and feed lots	Acreage in pasture	Acreage in garden	Acreage in orchard	Number bushels apples harvested	Acreage in crop not otherwise enumerated	Acreage in waste land, not utilized for any purpose	Number silos on farms	Average monthly wagepaid farm help summer months	Average monthly wagepaid farm help winter months
Adair	2,032	164	333,458	14,048	116,146	316	1,966	419	190	902	31	$ 28.73	$ 23.45
Adams	1,550	160	248,366	8,996	89,078	95	1,251	6,667	383	786	36	30.08	19.69
Allamakee	2,152	171	368,921	8,345	161,028	272	701	4,049	377	27,000	87	31.10	20.65
Appanoose	1,519	147	223,195	6,622	98,809	200	1,105	13,316	731	1,713	28	28.50	21.65
Audubon	1,698	156	265,107	12,397	72,394	176	1,023	326	89	251	82	31.02	23.23
Benton	2,210	184	406,388	17,820	101,683	272	895	1,582	401	494	132	32.50	23.33
Black Hawk	2,062	160	329,660	12,620	96,879	396	752	8,133	2,867	1,648	242	31.32	22.10
Boone	2,298	142	325,582	13,266	76,340	385	2,025	1,817	768	1,741	30	29.19	19.83
Bremer	1,765	138	243,346	10,830	68,188	210	368	5,048	2,764	784	90	29.19	24.43
Buchanan	2,090	152	318,616	10,175	106,222	174	372	4,348	737	1,053	95	28.26	23.43
Buena Vista	1,878	185	348,090	16,627	61,312	209	621	837	1,844	2,113	81	33.60	23.16
Butler	2,114	158	334,769	21,186	90,404	274	499	7,303	748	775	81	27.80	24.36
Calhoun	1,907	179	341,511	14,633	57,402	327	557	375	1,763	3,251	34	32.84	29.64
Carroll	1,910	169	323,125	15,639	69,607	2,545	898	282	360	806	30	29.00	23.25
Cass	2,081	161	334,165	13,838	96,911	500	1,857	3,100	173	720	68	31.72	23.82
Cedar	2,174	150	325,845	13,497	96,840	202	932	3,229	459	1,928	54	36.00	18.35
Cerro Gordo	1,629	187	304,221	14,552	69,448	257	742	4,004	871	2,265	100	29.63	20.52
Cherokee	1,745	196	345,525	17,087	83,406	182	631	392	437	1,419	29	32.81	19.57
Chickasaw	1,329	169	224,485	7,546	64,966	319	139	1,033	456	1,072	51	41.29	35.00
Clark	1,415	163	230,454	8,490	90,501	401	1,195	3,774	1,207	2,317	26	27.18	26.70
Clay	1,540	211	326,270	16,795	78,747	120	342	161	590	1,414	44	31.41	20.73
Clayton	2,710	153	415,867	11,907	160,288	2,819	1,337	7,966	1,413	10,863	152	24.80	19.25
Clinton	2,666	153	406,974	15,055	145,309	348	567	365	468	4,837	76	31.53	21.09
Crawford	2,171	189	411,374	19,091	103,189	380	764	668	184	889	20	31.65	23.66
Dallas	2,220	156	347,181	13,341	91,006	391	2,816	3,580	265	3,277	55	29.25	27.00
Davis	1,841	173	319,323	5,757	107,822	1,409	1,724	11,980	971	1,712	46	24.27	23.98
Decatur	1,673	142	237,200	9,698	96,993	416	1,469	9,284	2,455	844	49	25.00	22.00

TABLE NO. 1—CONTINUED

Counties	Number of farms	Average size of farms	Total acreage of farms	Total No. acres occupied by farm buildings, public highways and feed lots	Acreage in pasture	Acreage in garden	Acreage in orchard	Number bushels apples harvested	Acreage in crop not otherwise enumerated	Acreage in waste land, not utilized for any purpose	Number silos on farms	Average monthly wage paid farm help summer months	Average monthly wage paid farm help winter months
Delaware	1,971	165	324,822	13,020	114,506	362	525	2,981	793	2,024	191	29.44	24.66
Des Moines	1,809	125	226,563	7,079	80,870	675	2,166	24,988	3,216	7,947	32	30.22	26.88
Dickinson	907	213	193,052	8,102	44,444	41	236	163	572	3,684	20	28.77	22.00
Dubuque	2,305	152	350,544	8,765	144,906	2,999	1,069	11,213	836	2,869	18	30.95	21.63
Emmet	902	223	201,146	7,812	44,988	69	231	133	918	7,093	80	31.25	25.36
Fayette	2,856	143	408,589	17,828	155,183	590	752	8,987	763	2,202	263	28.15	23.77
Floyd	1,783	148	264,334	9,467	54,933	194	351	5,317	943	933	78	32.88	22.94
Franklin	1,944	180	349,983	16,912	80,917	142	505	2,663	662	3,994	83	33.50	23.00
Fremont	1,788	150	267,469	8,910	68,381	1,060	16,900	90,153	720	3,122	49	31.67	28.50
Greene	1,856	172	318,735	13,802	74,914	298	973	557	295	1,827	23	30.61	22.83
Grundy	1,581	195	310,054	15,359	67,449	182	335	2,656	153	242	71	29.93	20.07
Guthrie	2,128	155	329,449	12,868	113,822	352	2,126	2,628	308	1,607	42	30.31	29.55
Hamilton	2,069	163	337,216	15,142	76,356	331	522	862	400	6,185	53	31.89	22.32
Hancock	1,750	190	331,867	13,491	70,896	170	317	634	1,444	12,799	131	29.55	20.39
Hardin	1,764	179	314,998	15,280	72,851	430	940	2,562	972	1,447	67	30.94	23.87
Harrison	2,317	146	338,726	13,250	80,569	350	1,784	25,264	2,232	6,121	28	28.41	26.36
Henry	1,705	137	233,799	8,165	81,484	269	3,982	9,339	1,134	328	34	29.75	24.25
Howard	1,426	172	245,648	9,632	69,173	206	281	1,443	329	1,540	106	29.78	20.37
Humboldt	1,318	188	248,185	12,432	47,863	73	460	1,112	1,652	3,922	79	32.45	19.83
Ida	1,325	190	251,934	12,766	54,618	127	457	113	127	204	20	33.10	20.73
Iowa	2,041	164	335,300	11,630	108,750	516	1,355	8,753	435	13,011	155	31.97	22.06
Jackson	2,097	168	352,579	8,346	161,051	467	1,016	10,817	370	6,146	47	30.78	16.12
Jasper	2,788	152	425,036	16,247	136,636	645	2,031	1,745	306	1,012	38	28.69	26.27
Jefferson	1,652	134	220,810	7,631	82,724	157	1,109	16,165	316	465	24	28.00	26.42
Johnson	2,102	145	304,605	7,973	102,004	393	1,365	8,635	907	1,634	103	30.95	26.68
Jones	1,930	161	310,233	9,229	117,438	344	553	4,555	685	926	103	32.82	24.40
Keokuk	2,390	133	317,713	11,808	117,301	498	1,919	6,032	749	2,852	74	29.23	26.32
Kossuth	2,410	237	531,940	23,650	113,649	711	1,493	1,179	2,223	12,312	81	27.50	18.25
Lee	1,928	138	266,988	7,255	117,032	638	1,838	44,076	2,321	2,643	194	26.50	21.63
Linn	2,762	136	376,308	13,373	127,015	1,019	1,317	26,462	1,099	3,579	158	29.11	24.09
Louisa	1,199	157	188,072	4,625	64,976	238	1,224	12,340	2,044	1,153	34	30.52	29.60
Lucas	1,449	155	224,739	8,263	90,044	271	1,025	6,184	280	1,516	58	26.41	23.73

Lyon	1,544	212	358,070	17,020	57,923	119	439	200	467	828	52	33.10	17.93
Madison	2,030	150	304,983	11,640	108,315	376	2,178	658	480	3,212	28	28.12	23.81
Mahaska	2,355	126	296,725	7,952	94,736	475	2,233	5,322	715	2,413	56	26.80	21.74
Marion	1,981	150	297,193	9,504	112,435	599	3,486	2,666	708	1,241	25	29.24	27.78
Marshall	2,099	164	344,880	16,801	80,621	490	1,832	2,963	1,087	1,398	99	29.99	23.92
Mills	1,266	168	212,426	8,314	61,361	187	2,169	59,317	535	1,892	30	29.59	27.13
Mitchell	1,849	148	274,058	14,282	64,031	175	277	1,447	2,196	1,072	61	30.87	20.70
Monona	2,079	176	365,542	14,966	87,195	326	1,257	3,306	1,918	9,963	33	32.58	28.81
Monroe	1,527	141	215,511	6,200	92,923	176	1,134	12,014	247	3,780	44	25.00	21.12
Montgomery	1,486	158	235,191	9,110	75,939	137	1,605	2,263	118	851	68	32.50	26.97
Muscatine	1,664	141	234,197	8,592	101,213	1,246	1,073	9,362	5,787	3,885	101	29.85	24.54
O'Brien	1,739	193	335,882	17,436	72,822	203	880	312	369	357	45	30.80	17.27
Osceola	1,065	214	228,421	11,210	43,891	101	123	--------	132	1,794	22	30.33	14.00
Page	2,138	145	310,635	12,513	99,804	259	1,798	11,863	378	1,372	33	30.00	26.00
Palo Alto	1,510	195	295,025	12,666	58,183	159	353	563	568	4,934	27	29.06	11.82
Plymouth	2,598	196	509,859	22,244	90,288	412	444	462	1,041	529	36	30.08	17.84
Pocahontas	1,856	177	327,803	17,213	60,657	107	658	526	769	3,655	62	31.90	22.15
Polk	2,171	130	281,691	11,712	72,277	660	2,061	7,637	1,325	2,161	102	31.40	26.45
Pottawattamie	3,106	166	514,593	28,064	130,353	953	3,359	33,100	1,035	2,932	45	30.29	23.32
Poweshiek	2,079	158	328,233	14,051	105,383	356	1,553	213	309	787	142	30.34	25.43
Ringgold	1.841	163	299,288	10,442	100,596	227	1,239	4,639	1,184	1,005	34	25.28	23.88
Sac	1,735	200	347,789	16,808	75,578	574	1,042	1,879	608	1,488	29	31.78	19.78
Scott	2,084	126	263,184	8,909	74,118	787	1,306	13,104	573	1,526	92	32.61	17.95
Shelby	2,005	173	345,881	14,261	85,525	394	1,427	1,373	589	233	38	32.92	22.71
Sioux	2,399	186	446,777	21,133	76,824	186	229	12	662	368	109	29.54	17.87
Story	2,063	156	321,145	15,491	63,962	106	722	2,316	442	1,309	72	31.97	24.50
Tama	2,304	177	408,906	16,435	113,624	298	913	2,153	1,208	1,708	76	31.72	23.27
Taylor	1,700	152	257,767	10,183	95,066	438	2,098	6,546	301	515	52	26.38	25.00
Union	1,633	150	245,366	9,066	95,023	347	1,870	1,731	260	2,249	19	28.47	24.77
Van Buren	1,861	131	243,950	708	123,864	190	2,044	38,215	849	989	86	26.86	26.21
Wapello	1,680	129	216,715	5,749	89,347	2,231	1,493	18,975	10,937	1,357	52	28.71	27.51
Warren	2,268	138	311,910	12,176	125,022	469	2,015	3,329	336	1,861	67	30.33	28.60
Washington	1,922	158	303,950	9,875	101,744	252	1,383	16,697	924	465	49	30.13	28.91
Wayne	1,844	154	283,427	11,050	98,748	283	1,244	8,828	902	216	58	26.01	25.32
Webster	2,444	167	409,039	15,971	89,306	1,935	5,341	8,893	593	9,361	39	28.31	21.44
Winnebago	1,444	166	239,129	12,484	54,450	18	193	610	2,380	6,533	80	31.48	19.60
Winneshiek	2,591	153	396,135	15,592	127,392	369	744	5,391	939	12,055	177	27.00	21.75
Woodbury	2.420	180	436,624	17,371	97,499	635	1,276	2,175	1,487	535	60	32.27	26.08
Worth	1,332	174	232,311	11,729	54,537	51	354	1,358	4,345	3,121	52	30.09	16.40
Wright	1,624	199	323,513	14,578	66,605	76	205	964	830	4,562	43	31.37	23.76
Total	189,969	162.8	30,914,178	1,241,601	8,968,644	45,793	134,735	738,904	104,708	294,755	6,781	$ 30.11	$ 23.26

TABLE NO. 2

Acreage; yield per acre and total yield of Corn, Oats, Winter Wheat, Spring Wheat and Barley, by counties for the year of 1912.

Counties	Corn			Oats			Winter Wheat			Spring Wheat			Barley		
	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels
Adair	99,510	42	4,201,453	35,274	40	1,403,794	2,794	30	83,849	4,184	16	65,880	1,575	31	49,434
Adams	71,356	44	3,137,907	22,064	38	839,168	10,392	27	276,632	660	14	9,373	630	29	18,492
Allamakee	40,155	42	1,689,404	35,144	33	1,142,407	1,027	22	22,524	1,095	14	15,138	15,394	23	360,615
Appanoose	43,481	36	1,549,780	18,586	39	726,881	3,081	12	35,900	216	10	2,080	12	27	325
Audubon	92,659	47	4,325,736	42,533	38	1,620,911	1,094	27	29,892	5,872	17	98,990	5,892	33	195,815
Benton	129,232	52	6,685,460	78,093	45	3,508,028	581	19	10,959	849	14	12,057	12,848	30	383,154
Black Hawk	98,782	50	4,931,731	59,581	39	2,308,598	1,718	20	34,018	276	12	3,329	6,276	25	153,819
Boone	114,502	52	5,953,807	61,928	47	2,940,431	2,662	31	82,030	1,935	17	32,440	318	36	11,423
Bremer	61,791	43	2,667,193	51,280	39	2,002,354	289	20	5,742	368	14	5,219	2,325	28	65,054
Buchanan	88,040	44	3,836,814	58,587	40	2,221,784	462	14	6,385	280	14	3,825	1,380	23	31,838
Buena Vista	116,147	50	5,748,896	81,715	49	4,012,957	615	21	12,660	1,162	16	19,040	1,061	33	34,762
Butler	105,458	47	4,915,284	83,339	37	3,060,996	881	17	14,969	661	17	10,398	1,532	27	41,495
Calhoun	140,542	46	6,477,983	91,662	46	4,229,576	1,084	22	24,145	498	13	6,552	1,146	32	36,630
Carroll	109,686	49	5,371,708	65,926	40	2,636,101	1,103	24	26,350	7,113	16	113,324	4,103	30	125,004
Cass	107,842	40	4,363,225	38,369	35	1,340,578	15,455	27	413,378	8,403	16	130,584	2,620	31	80,180
Cedar	102,380	52	5,339,335	54,899	32	1,744,661	2,468	12	29,824	624	13	8,171	14,591	22	417,080
Cerro Gordo	94,991	43	4,042,846	73,228	47	3,423,136	648	18	11,864	1,382	15	21,241	3,269	31	101,336
Cherokee	122,679	46	5,673,504	77,720	45	3,475,187	258	27	6,947	890	18	16,459	3,328	33	101,120
Chickasaw	51,216	41	2,081,599	47,306	39	1,873,178	318	22	6,898	1,947	13	25,463	4,178	26	107,707
Clarke	54,453	43	2,353,351	20,221	37	750,522	7,106	23	165,623	283	8	2,213	69	38	2,635
Clay	96,533	49	4,688,715	74,648	51	3,824,832	410	20	8,222	3,124	14	45,027	3,492	33	115,431
Clayton	69,507	43	2,968,851	55,637	36	2,001,645	1,700	20	35,006	678	14	9,642	14,855	24	357,766
Clinton	119,176	53	6,321,260	44,068	45	1,969,889	5,640	11	62,436	1,278	13	16,813	9,004	32	286,450
Crawford	134,789	41	5,557,956	59,578	34	2,053,982	2,595	19	49,482	15,627	14	222,276	5,635	29	164,331
Dallas	127,363	47	6,004,859	53,827	49	2,617,034	9,818	34	335,349	1,723	19	32,089	848	39	32,731
Davis	56,249	29	1,605,984	29,128	27	793,645	2,444	9	22,238	52	13	692	5	42	210
Decatur	66,972	39	2,626,163	20,065	37	751,324	9,754	24	233,128	162	9	1,508	3	26	78
Delaware	86,243	39	3,336,763	46,022	38	1,748,398	192	11	2,111	244	10	2,464	8,850	25	223,167
Des Moines	67,575	43	2,889,255	28,217	37	1,031,367	1,485	10	14,416	264	11	2,785	410	25	10,452
Dickinson	54,681	36	1,966,187	34,429	41	1,420,921	198	14	2,700	5.944	13	77,079	2,654	26	67,774

Dubuque	64,960	37	2,400,075	50,294	33	1,676,943	387	14	5,534	601	13	7,643	2,996	26	77,484
Emmet	53,026	45	2,389,355	38,787	54	2,112,016	224	14	3,148	5,861	13	74,972	2,782	35	96,099
Fayette	90,930	41	3,709,182	68,744	31	2,696,941	691	19	13,314	977	12	11,573	8,674	24	209,025
Floyd	78,762	41	3,230,041	71,608	41	2,927,264	682	19	12,775	1,448	16	22,858	2,159	30	64,165
Franklin	110,567	43	4,738,203	84,859	45	3,831,134	795	19	15,105	1,263	16	19,817	1,474	41	60,920
Fremont	96,916	41	3,977,609	12,210	29	356,473	31,361	21	664,874	1,799	13	23,408	127	24	3,082
Greene	126,968	49	6,158,739	66,155	43	2,848,151	1,115	25	27,681	998	15	14,753	791	32	25,305
Grundy	103,567	53	5,482,869	49,110	48	3,811,167	869	23	20,256	407	17	6,709	5,990	35	212,187
Guthrie	99,661	50	4,971,012	50,132	40	1,994,983	2,513	32	79,919	3,789	17	62,571	1,204	33	29,430
Hamilton	119,516	50	5,978,410	77,627	44	3,412,392	1,683	23	38,553	725	15	11,805	311	33	10,178
Hancock	93,989	47	4,440,960	73,671	52	3,816,217	423	19	7,870	6,105	18	109,204	5,158	36	183,220
Hardin	103,214	48	4,956,681	70,314	42	2,970,506	996	21	20,704	1,893	15	27,765	857	32	27,738
Harrison	155,800	33	5,192,391	20,062	28	556,347	20,455	19	385,540	19,730	14	277,633	2,155	27	58,451
Henry	65,274	44	2,849,165	33,319	32	1,071,567	930	12	10,810	92	15	1,377	71	22	1,570
Howard	50,089	33	1,641,219	48,941	38	1,846,922	1,156	18	21,142	2,376	10	23,799	9,640	25	238,368
Humboldt	84,141	52	4,413,043	59,609	52	3,132,318	708	29	20,218	4,464	17	77,641	1,392	35	49,216
Ida	90,929	48	4,402,490	48,047	45	2,178,184	548	23	12,359	3,176	16	51,845	7,401	32	239,682
Iowa	94,018	50	4,744,178	43,951	43	1,887,607	1,780	18	32,131	1,063	13	13,867	1,278	28	36,255
Jackson	61,281	42	2,563,052	30,736	34	1,049,521	2,624	12	31,207	1,118	10	11,210	3,039	24	73,510
Jasper	135,704	50	6,753,370	57,840	45	2,619,977	6,668	24	161,710	5,551	12	66,935	418	26	10.897
Jefferson	56,931	44	2,401,958	26,065	41	1,081,307	2,232	10	21,718	434	11	4,950	384	26	9,914
Johnson	87,549	51	4,462,363	42,806	42	1,792,196	3,343	14	46,075	811	15	12.186	1.504	32	47,936
Jones	76,801	48	3,666,192	34,778	38	1,317,122	325	16	5,159	462	15	6,740	8,190	29	240,565
Keokuk	97,758	44	4,336,431	38,962	39	1,529,208	3,139	14	43,793	2,348	11	24,821	564	26	14,917
Kossuth	153,170	45	6,937,578	119,019	53	6,250,622	676	19	12,606	14,618	15	212,068	6,334	34	216,725
Lee	60,529	42	2,527,893	23,223	40	920,229	3,017	7	20,823	154	7	1,052	381	31	11,850
Linn	95,756	52	4,969,378	62,111	38	2,365,339	813	16	13,135	1,780	11	20,467	2,604	18	47,976
Louisa	63,883	41	2,614,163	21,791	36	781,067	1,973	11	21,938	159	12	1,958	267	26	6,974
Lucas	47,414	47	2,227,590	21,554	37	797,063	8,760	21	188,301	885	10	8,762	18	34	620
Lyon	115,535	38	4,361,959	85,386	42	3,690,146	269	19	5,066	9,693	19	187,878	11,699	28	324,139
Madison	105,127	42	4,379,573	27,021	51	1,372,932	9,114	32	296,015	1,881	19	35,501	1,773	32	56,102
Mahaska	158,685	31	4,860,166	28,727	45	1,726,441	5,858	23	133,859	2,442	20	47,859	865	36	30,847
Marion	86,543	46	4,011,952	28,150	40	1,139,844	16,323	26	426,682	3,829	10	40,436	807	32	25,841
Marshall	117,419	52	6,069,273	74,537	42	3,143,353	6,740	20	136,786	1,877	15	28,291	826	31	25,642
Mills	83,063	39	3,210,188	15,897	30	471,109	20,223	20	406,605	2,482	14	34,504	456	25	12,005
Mitchell	63,900	40	2,575,705	75,752	44	3,346,532	686	21	14,315	3,981	14	57,463	9,233	25	233,989
Monona	142,167	37	5,252,549	21,136	24	5,506,993	28,670	23	676,786	13,416	13	173,977	2,432	16	45,149
Monroe	51,434	33	1,719,831	18,891	21	405,323	6,724	23	153,687	3,002	12	34,809	45	33	1,474
Montgomery	84,795	44	3,756,231	16,694	41	696,171	24,759	25	627,005	4,485	15	66,012	393	29	11,498
Muscatine	71,700	48	3,467,473	21,235	42	890,670	3,677	13	45,634	678	12	8,358	6,320	29	184,038
O'Brien	112,802	45	5,040,178	75,163	52	3,928,774	306	24	7,329	3,571	15	54,487	12,481	30	378,497
Osceola	72,865	39	2,854,423	61.066	46	2,829,677	243	18	4,428	3,731	14	50,910	8,608	29	253,174
Page	104,522	47	4,934,506	18,979	41	773,374	32,114	28	857,489	2,767	16	42,971	338	31	10,391
Palo Alto	91,380	43	3,940,365	61,322	48	2,953,524	210	20	4,171	3,547	11	40,014	1,621	31	50,447
Plymouth	186,044	38	7,093,845	77,351	42	3,248,655	3,030	21	63,764	40,354	15	619,290	7,098	22	159,151
Pocahontas	120,096	48	5,751,804	91,185	53	4,860,606	745	19	14,107	1,695	32	54,680	1,037	32	33,162
Polk	96,584	49	4,750,395	35,857	46	1,752,076	20,085	30	610,392	3,933	15	60,338	135	37	4,934
Pottawattamie	194,288	37	7,351,165	45,572	30	1,378,985	27,145	22	601,320	15,947	15	234,829	3,661	28	102,920

TABLE NO. 2—CONTINUED

Counties	Corn			Oats			Winter Wheat			Spring Wheat			Barley		
	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels	Acres	Bushels per acre	Total bushels
Poweshiek	114,074	49	5,593,397	49,158	47	2,287,362	1,413	22	31,435	1,852	12	23,088	1,500	31	45,774
Ringgold	73,263	41	3,026,204	23,942	38	917,573	8,603	22	193,400	214	15	2,255	27	29	794
Sac	114,072	47	5,316,473	70,960	44	3,111,750	617	26	15,983	1,594	27	43,597	5,729	32	181,557
Scott	74,812	54	4,088,249	25,213	42	1,063,266	5,568	14	78,224	1,602	13	21,264	24,370	30	729,115
Shelby	132,547	39	5,261,743	48,656	33	1,616,568	1,543	22	33,204	12,327	14	174,304	9,553	28	269,751
Sioux	166,329	44	7,253,168	84,262	42	3,547,676	1,506	27	40,273	29,971	14	404,709	19,117	27	522,635
Story	126,376	47	5,910,608	62,128	45	2,786,752	4,067	20	80,593	751	13	10,122	159	26	4,137
Tama	124,114	50	6,213,704	69,040	44	3,061,590	2,239	21	47,999	3,482	13	46,148	10,533	33	350,070
Taylor	72,950	44	3,200,567	19,832	44	871,241	18,077	27	483,627	264	11	3,033	393	31	12,078
Union	63,150	45	2,862,243	21,785	44	955,960	2,687	24	64,147	761	15	11,709	121	31	3,812
Van Buren	54,305	41	2,221,756	21,310	41	866,3[illegible]8	2,087	8	16,814	86	15	1,275	96	20	1,921
Wapello	53,679	39	2,104,450	18,826	42	796,231	8,994	17	153,898	613	6	3,807	215	26	5,667
Warren	84,550	51	4,303,497	21,868	43	961,131	23,033	29	663,562	1,478	14	20,909	287	35	10,164
Washington	96,742	51	4,920,792	48,426	40	1,939,915	2,356	13	31,000	608	13	7,611	294	30	8,702
Wayne	67,238	36	2,420,626	29,363	40	1,177,432	4,077	20	81,877	66	9	526	63	25	1,605
Webster	133,161	48	6,417,920	96,731	44	4,263,972	1,319	25	33,166	3,530	16	57,949	431	30	13,074
Winnebago	59,815	43	2,573,264	35,678	49	1,749,567	48	7	348	17,310	17	286,231	4,719	32	153,334
Winneshiek	69,945	40	2,793,630	63,140	34	2,131,754	1,058	19	19,647	7,685	11	84,062	23,768	24	570,736
Woodbury	181,463	41	7,413,333	55,206	32	1,785,431	11,841	22	263,285	13,125	14	190,118	4,273	28	120,986
Worth	51,110	39	1,968,172	47,526	40	1,908,261	324	33	10,578	13,296	13	171,660	5,946	35	209,470
Wright	105,397	50	5,263,233	82,382	46	3,799,146	452	18	8,188	2,505	17	42,625	1,552	33	51,259
Total	9,420,434	44.5	419,097,329	4,874,752	42.6	207,819,162	497,938	23	11,460,943	389,371	14.6	5,702,539	389,410	28.5	11,100,558

TABLE NO. 3

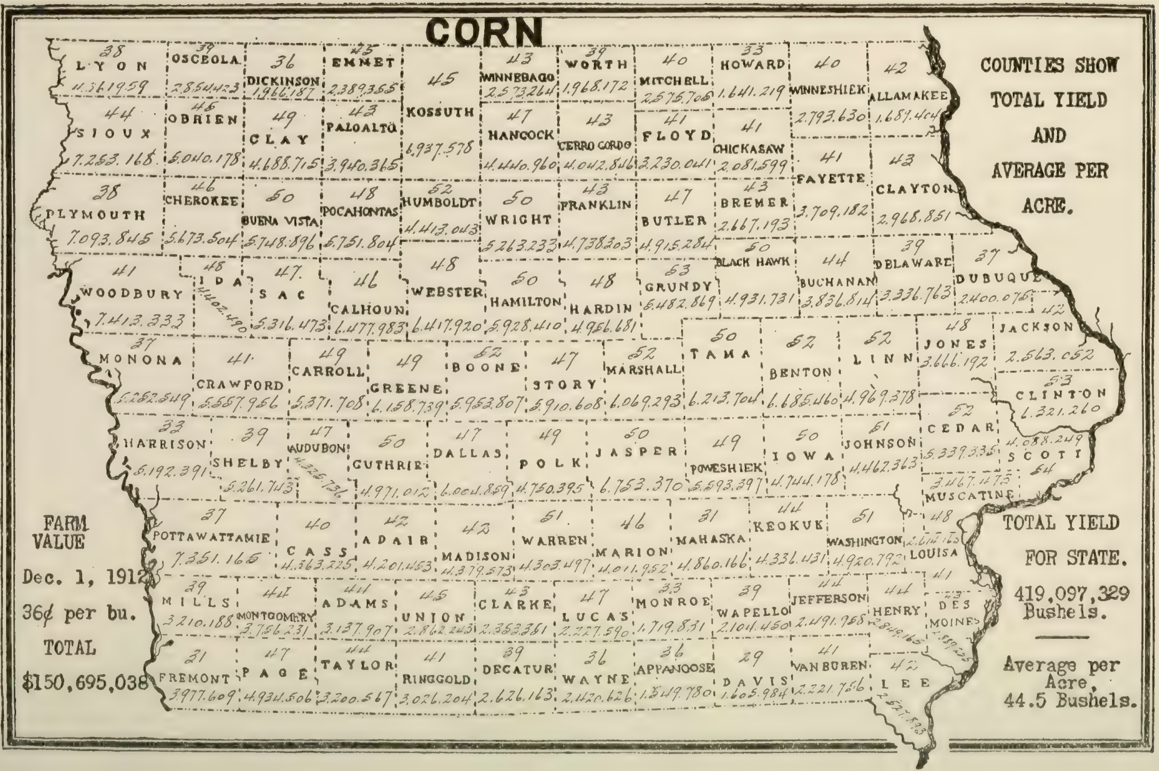
Acreage, yield per acre and total yield of rye, tame hay, wild hay, alfalfa, potatoes and flax seed, by counties, for the year of 1912.

Counties	Rye			Hay (Tame)			Hay (Wild)			Alfalfa			Potatoes			Flax Seed	
	Acres	Bushels per acre	Total bushels	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Bushels per acre	Total bushels	Acres	Total bushels
Adair	359	20	7,196	34,095	1.1	38,399	3,525	1.6	5,909	37	----	87	1,208	83	100,122	--------	--------
Adams	204	24	4,795	26,393	1.2	33,470	1,508	1.4	2,148	126	----	303	310	86	26,794	--------	--------
Allamakee	1,179	14	16,768	46,020	1.2	58,472	1,516	1.7	2,622	53	----	135	1,126	147	165,857	31	186
Appanoose	315	18	5,637	26,385	.9	24,185	1,329	1.2	1,643	15	----	17	199	58	11,622	--------	--------
Audubon	77	28	2,175	25,062	1.2	30,282	2,658	1.6	4,326	71	----	210	1,050	85	88,983	--------	--------
Benton	1,211	14	17,260	36,301	1.2	46,246	4,263	1.2	5,166	15	----	15	1,203	83	100,018	1	4
Black Hawk	2,390	14	34,523	28,115	1.3	36,721	9,562	1.0	10,331	61	----	98	2,496	65	161,496	15	20
Boone	143	27	3,853	23,090	1.3	30,760	13,521	1.0	14,290	68	----	231	1,527	53	80,341	35	227
Bremer	1,349	18	24,673	16,730	1.1	17,885	19,547	1.0	19,241	18	----	11	1,335	96	128,289	25	220
Buchanan	1,206	15	17,899	33,958	1.0	36,329	13,234	1.0	13,435	15	----	19	925	101	93,584	5	41
Buena Vista	19	26	500	17,690	1.4	25,531	16,786	1.1	18,987	131	----	305	1,871	103	193,269	280	2,687
Butler	3,095	18	57,089	22,457	1.1	25,385	11,042	1.0	11,842	14	----	28	1,483	101	149,945	--------	--------
Calhoun	50	14	688	18,595	1.3	24,457	11,844	1.0	12,520	78	----	132	1,065	91	96,620	117	955
Carroll	114	25	2,863	23,756	1.3	30.095	10,114	1.4	14,362	71	----	147	2,663	85	226,684	6	57
Cass	280	18	5,080	33,861	1.1	36,899	1,983	1.4	2,844	202	----	410	1,312	82	108,071	38	170
Cedar	957	21	20,490	40,364	1.0	41,567	336	1.2	390	36	----	54	1,099	99	109,264	--------	--------
Cerro Gordo	565	18	10,169	20,913	1.1	23,662	14,553	.9	13,412	48	----	91	1,342	129	173,100	538	6,074
Cherokee	81	19	1,521	23,496	1.4	34,516	11,110	1.2	13,416	484	----	1,136	1,651	100	165,396	73	968
Chickasaw	777	18	13,855	18,421	1.1	20,206	11,781	1.0	12,098	--------	----	--------	976	108	104,901	394	4,568
Clarke	70	36	2,497	17,560	1.2	21,057	122	.9	110	1	----	1	247	62	15,323	--------	--------
Clay	348	25	8,771	19,960	1.2	24,751	19,698	1.1	21,315	28	----	35	932	96	89,176	1,173	14,940
Clayton	2,007	16	34,209	55,937	1.2	70,040	1,541	1.2	1,858	38	----	212	1,887	121	243,533	3	11
Clinton	1,991	19	38,494	52,038	1.1	55,843	4,432	1.2	5,264	11	----	33	1,095	115	125,342	--------	--------
Crawford	284	20	5,809	39,387	1.1	43,241	6,298	1.3	8,165	712	----	1,638	2,035	92	187,323	--------	--------
Dallas	396	21	8,223	24,838	1.3	33,515	5,167	1.1	5,516	165	----	479	757	77	58,391	--------	--------
Davis	367	15	5,599	34,620	1.5	53,508	68	1.5	105	14	----	6	422	70	29,329	--------	--------
Decatur	573	22	12,418	26,948	1.1	30,235	456	1.0	453	48	----	71	176	69	12,145	--------	--------
Delaware	2,102	15	31,856	37,210	1.2	42,963	6,972	1.1	7,443	15	----	26	1,111	103	113,997	2	20
Des Moines	903	12	10,973	21,968	1.0	21,219	226	1.4	311	47	----	113	673	72	48,274	--------	--------
Dickinson	242	25	6,428	7,442	1.1	8,740	15,430	1.1	17,162	43	----	90	568	98	55,847	925	9,757

TABLE NO. 3—CONTINUED

Counties	Rye			Hay (Tame)			Hay (Wild)			Alfalfa			Potatoes			Flax Seed	
	Acres	Bushels per acre	Total bushels	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Tons per acre	Total tons	Acres	Bushels per acre	Total bushels	Acres	Total bushels
Dubuque	890	16	14,097	53,368	1.1	56,496	707	1.5	1,078	41	----	98	2,134	121	258,404	19	63
Emmet	208	29	6,033	12,821	1.1	14,125	14,222	1.0	14,228	1	----	1	766	122	93,601	1,168	11,409
Fayette	2,024	18	36,481	45,542	1.1	50,123	12,114	.9	11,242	23	----	50	1,821	114	207,029	93	1,008
Floyd	2,261	21	48,414	23,042	1.2	27,814	4,975	1.1	5,376	17	----	23	1,725	125	216,663	445	4,846
Franklin	164	15	2,529	24,102	1.2	29,585	14,177	1.0	14,187	42	----	84	1,677	109	182,821	285	6,267
Fremont	1,105	17	18,789	10,849	.9	9,798	5,635	1.1	5,965	3,885	----	8,158	538	65	35,194	--------	--------
Green	101	28	2,861	23,830	1.1	27,222	10,049	1.0	9,979	33	----	66	827	81	66,941	48	190
Grundy	110	24	2,660	22,098	1.3	27,805	7,395	1.1	8,340	20	----	41	3,209	116	371,223	5	55
Guthrie	76	24	1,848	24,026	1.3	31,544	4,889	1.2	5,686	45	----	76	1,297	55	71,711	--------	--------
Hamilton	99	14	1,435	23,929	1.3	33,148	12,986	1.1	13,945	51	----	135	787	98	76,470	251	2,419
Hancock	591	23	13,877	16,983	1.1	19,063	27,792	.9	25,373	11	----	48	1,857	80	148,714	769	7,756
Hardin	109	16	1,778	23,854	1.3	29,575	10,478	1.1	11,397	66	----	182	1,381	102	141,077	18	296
Harrison	363	19	6,961	10,265	1.1	10,980	9,486	1.5	13,950	5,959	----	13,466	836	72	60,113	--------	--------
Henry	705	16	11,199	21,653	1.0	21,165	--------	------	--------	24	----	51	334	74	24,714	--------	--------
Howard	1,207	20	24,384	26,712	1.1	29,117	9,489	.9	8,684	5	----	13	919	142	130,580	2,047	19,836
Humboldt	107	19	2,011	16,344	1.5	24,199	13,194	1.0	12,671	45	----	138	701	121	84,625	505	5,518
Ida	287	23	6,565	23,466	1.3	30,793	2,613	1.4	3,616	97	----	212	930	124	115,334	--------	--------
Iowa	681	20	13,380	29,536	1.1	32,592	1,286	1.3	1,637	42	----	55	1,348	97	130,895	--------	--------
Jackson	2,420	15	36,915	36,094	1.4	51,517	1,247	1.6	1,968	18	----	42	1,192	106	126,041	15	143
Jasper	352	22	7,622	39,568	1.2	48,293	1,283	1.1	1,399	21	----	48	1,209	86	104,048	--------	--------
Jefferson	517	12	6,407	25,173	1.2	29,033	5	1.6	18	18	----	26	437	57	24,702	--------	--------
Johnson	1,843	17	31,084	39,792	1.1	41,930	1,049	.9	971	44	----	295	1,077	87	93,527	--------	--------
Jones	1,394	17	23,145	43,662	1.2	51,717	455	1.2	543	20	----	47	859	111	95,304	--------	--------
Keokuk	859	20	16,917	39,213	1.0	40,872	169	1.4	240	11	----	43	764	74	57,433	--------	--------
Kossuth	405	29	11,705	27,257	1.1	31,658	59,461	1.0	59,175	21	----	91	3,278	73	240,420	1,791	14,235
Lee	3,340	12	40,287	30,609	1.0	30,494	300	1.6	518	36	----	59	1,083	73	78,579	--------	--------
Linn	1,194	17	20,300	46,528	1.2	55,062	3,888	1.1	4,118	28	----	48	1,622	87	140,675	--------	--------
Louisa	1,337	13	17,738	15,385	1.1	16,785	726	1.6	1,178	103	----	80	365	71	25,817	--------	--------
Lucas	479	18	8,600	14,585	1.2	17,009	351	1.0	368	25	----	51	183	76	13,889	--------	--------
Lyon	236	21	4,935	11,246	.9	10,240	11,777	1.1	12,862	326	----	397	2,321	92	212,471	119	1,427
Madison	441	27	11,735	28,483	1.4	38,662	1,284	1.0	1,341	47	----	115	778	92	71,310	--------	--------
Mahaska	983	23	23,028	29,263	1.2	36,313	518	1.3	674	39	----	103	698	70	49,535	2	15
Marion	862	21	18,330	24,613	1.2	29,313	374	1.4	505	11	----	12	533	68	36,304	--------	--------

Marshall	206	24	4,870	30,267	1.2	36,939	1,151	1.1	1,250	26	----	22	1,632	88	143,301	--------	--------
Mills	522	20	10,378	11,520	.9	9,880	3,900	1.1	4,339	4,155	----	10,817	362	70	26,249	--------	--------
Mitchell	256	22	5,589	20,616	1.3	26,913	2,444	1.0	2,491	7	----	17	1,764	161	284,351	2,637	24,886
Monona	339	17	5,670	10,167	1.2	12,556	17,257	1.2	21,262	9,223	----	20,741	978	64	64,412	--------	--------
Monroe	399	21	8,281	25,743	1.0	26,420	118	1.0	117	9	----	46	233	67	15,696	--------	--------
Montgomery	439	24	10,518	23,257	1.2	28,456	851	1.6	1,331	754	----	1,805	582	71	41,270	--------	--------
Muscatine	3,081	13	41,109	24,736	.9	22,753	934	1.0	935	36	----	104	2,440	80	205,608	--------	--------
O'Brien	199	25	4,890	19,926	1.7	23,280	9,990	1.2	12,446	80	----	297	1,876	86	161,392	264	2,953
Osceola	320	27	8,696	9,583	1.1	10,257	11,544	1.1	12,897	3	----	5	939	101	94,646	830	8,761
Page	1,030	22	22,591	30,013	1.1	34,581	1,116	1.3	1,496	319	----	640	433	88	38,219	--------	--------
Palo Alto	430	19	8,318	10,843	1.2	13,263	21,844	1.1	34,478	12	----	35	794	95	75,324	1,197	8,569
Plymouth	93	27	2,185	23,915	2.0	49,355	21,357	1.4	30,069	2,221	---	5,374	3,716	56	206,917	113	836
Pocahontas	291	26	7,512	14,024	1.3	17,713	22,276	1.0	22,467	32	---	65	1,262	79	99,152	978	9,412
Polk	316	25	8,012	23,695	1.5	24,542	3,735	1.2	4,489	109	---	286	1,365	70	95,977	10	210
Pottawattamie	828	18	14,879	34,356	1.0	33,232	9,275	1.3	11,771	8,531	----	17,476	2,407	64	153,823	--------	--------
Poweshiek	431	18	7,569	29,229	1.1	37,393	409	1.0	424	37	----	35	1,080	89	95,965	--------	--------
Ringgold	281	18	5,075	36,948	1.1	41,271	349	1.1	373	6	----	20	148	75	11,066	--------	--------
Sac	90	23	2,079	25,989	1.4	35,923	9,218	1.3	11,653	255	----	803	1,215	87	105,610	57	577
Scott	3,228	18	59,269	27,151	1.0	29,029	3,071	1.1	3,591	62	----	292	6,258	108	674,069	--------	--------
Shelby	436	19	8,387	27,410	1.2	32,646	5,892	1.7	9,876	540	----	1,034	1,181	86	110,796	--------	--------
Sioux	37	17	633	17,934	1.1	20,928	19,294	1.2	22,572	630	----	1,358	1,997	111	222,599	142	1,326
Story	269	20	5,514	27,846	1.4	38,261	7,117	1.0	7,225	123	----	302	542	82	44,525	62	220
Tama	593	17	10,113	37,183	1.2	42,337	3,181	1.1	3,609	39	----	55	1,896	106	201,299	45	186
Taylor	720	23	16,320	30,337	1.3	38,176	673	1.4	955	113	----	247	457	83	37,793	2	18
Union	297	22	6,626	24,770	1.3	32,131	1,653	1.5	1,544	14	---	53	713	78	55,632	--------	--------
Van Buren	716	14	10,207	31,981	1.1	35,164	53	1.3	68	132	---	248	232	66	15,227	--------	--------
Wapello	1,053	21	21,660	25,515	1.2	30,920	13	1.4	18	11	--	31	652	58	38,030	--------	--------
Warren	1,334	24	22,380	30,855	1.3	40,309	669	1.3	851	39	----	52	697	70	48,724	--------	--------
Washington	478	19	9,140	31,853	1.0	22,340	99	1.5	148	7	----	13	525	83	43,828	--------	--------
Wayne	615	15	9,340	38,271	.9	35,435	82	1.4	113	3	----	7	207	69	14,246	--------	--------
Webster	75	24	1,823	22,914	1.4	33,137	24,133	1.0	23,859	59	---	205	936	83	77,506	395	3,412
Winnebago	128	30	3,824	12,629	1.3	16,778	27,789	1.1	31,283	62	---	182	987	161	158,624	1,504	13,351
Winneshiek	1,933	16	30,985	45,542	1.3	60,612	4,953	1.0	5,064	43	---	80	1,340	148	198,670	1,257	14,204
Woodbury	159	18	2,887	21,263	1.3	28,293	13,181	1.4	18,538	4,991	----	12,575	1,627	82	133,699	50	285
Worth	230	31	7,199	15,500	1.2	19,179	18,053	1.2	21,016	69	----	166	1,321	97	128,116	3,131	29,997
Wright	59	18	1,081	24,936	1.2	29,297	12,424	1.0	12,485	18	----	49	893	119	105,913	256	2,841
Total	73,315	18	1,322,382	2,635,744	1.2	3,138,940	754,374	1.1	836,735	46,644	233	105,926	120,035	93.9	11,277,537	24,121	238,442


38 LYON 4.361.959
39 OSCEOLA 2.854.423
36 DICKINSON 1.966.187
45 EMMET 2.389.365
45 KOSSUTH 6.937.578
43 WINNEBAGO 2.573.264
39 WORTH 1.968.172
40 MITCHELL 2.575.706
33 HOWARD 1.641.219
40 WINNESHIEK 2.793.630
42 ALLAMAKEE 1.689.404
44 SIOUX 7.253.168
46 OBRIEN 5.040.178
49 CLAY 4.688.715
43 PALOALTO 3.940.365
47 HANCOCK 4.440.960
43 CERRO GORDO 4.042.846
41 FLOYD 3.230.041
41 CHICKASAW 2.081.599
41 FAYETTE 3.709.182
43 CLAYTON 2.968.851
38 PLYMOUTH 7.093.845
46 CHEROKEE 5.673.504
50 BUENA VISTA 5.748.896
48 POCAHONTAS 5.751.804
52 HUMBOLDT 4.413.043
50 WRIGHT 5.263.233
43 FRANKLIN 4.738.203
47 BUTLER 4.915.284
43 BREMER 2.667.193
50 BLACK HAWK 4.931.731
44 BUCHANAN 3.836.814
39 DELAWARE 3.336.763
37 DUBUQUE 2.400.075
41 WOODBURY 7.413.333
48 IDA 4.402.490
47. SAC 5.316.473
46 CALHOUN 6.477.983
48 WEBSTER 6.417.920
50 HAMILTON 5.928.410
48 HARDIN 4.956.681
53 GRUNDY 5.482.869
50 TAMA 6.213.704
52 BENTON 6.685.460
52 LINN 4.969.378
48 JONES 3.666.192
42 JACKSON 2.563.052
53 CLINTON 6.321.260
37 MONONA 5.252.549
41 CRAWFORD 5.557.956
49 CARROLL 5.371.708
49 GREENE 6.158.739
52 BOONE 5.953.807
47 STORY 5.910.608
52 MARSHALL 6.069.293
33 HARRISON 5.192.391
39 SHELBY 5.261.743
47 AUDUBON 4.325.736
50 GUTHRIE 4.971.012
47 DALLAS 6.004.859
49 POLK 4.750.395
50 JASPER 6.753.370
49 POWESHIEK 5.593.397
50 IOWA 4.744.178
51 JOHNSON 4.462.363
52 CEDAR 5.339.335
4.088.249 SCOTT 54
3.467.475 MUSCATINE 48
37 POTTAWATTAMIE 7.351.165
40 CASS 4.363.225
42 ADAIR 4.201.453
42 MADISON 4.379.573
51 WARREN 4.303.497
46 MARION 4.011.952
31 MAHASKA 4.860.166
44 KEOKUK 4.336.431
51 WASHINGTON 4.920.792
2.614.163 LOUISA 41
39 MILLS 3.210.188
44 MONTGOMERY 3.756.231
44 ADAMS 3.137.907
45 UNION 2.862.243
43 CLARKE 2.353.361
47 LUCAS 2.227.590
33 MONROE 1.719.831
39 WAPELLO 2.104.450
44 JEFFERSON 2.491.958
44 HENRY 2.849.165
43 DES MOINES 2.859.225
31 FREMONT 3.977.609
47 PAGE 4.934.506
44 TAYLOR 3.200.567
41 RINGGOLD 3.026.204
39 DECATUR 2.626.163
36 WAYNE 2.420.626
36 APPANOOSE 1.549.780
29 DAVIS 1.605.984
41 VAN BUREN 2.221.756
42 LEE 2.527.593

CORN

COUNTIES SHOW
TOTAL YIELD
AND
AVERAGE PER
ACRE.

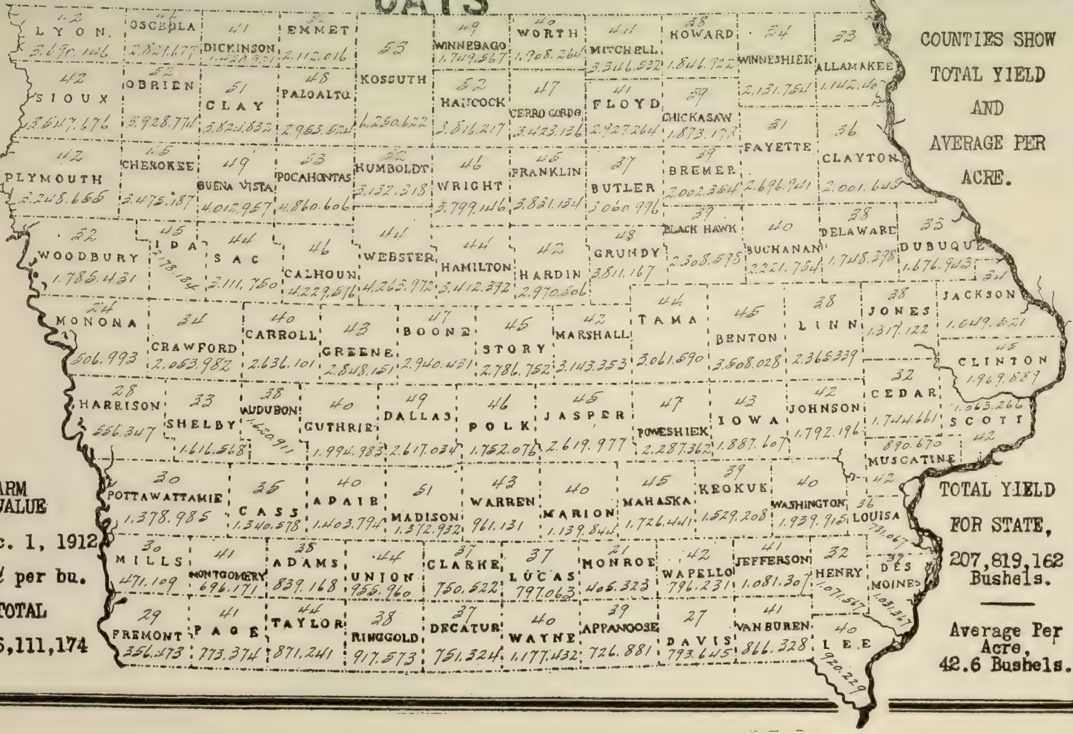
TOTAL YIELD
FOR STATE.
419,097,329
Bushels.

Average per
Acre,
44.5 Bushels.

FARM
VALUE
Dec. 1, 1912
36¢ per bu.
TOTAL
$150,695,038

OATS

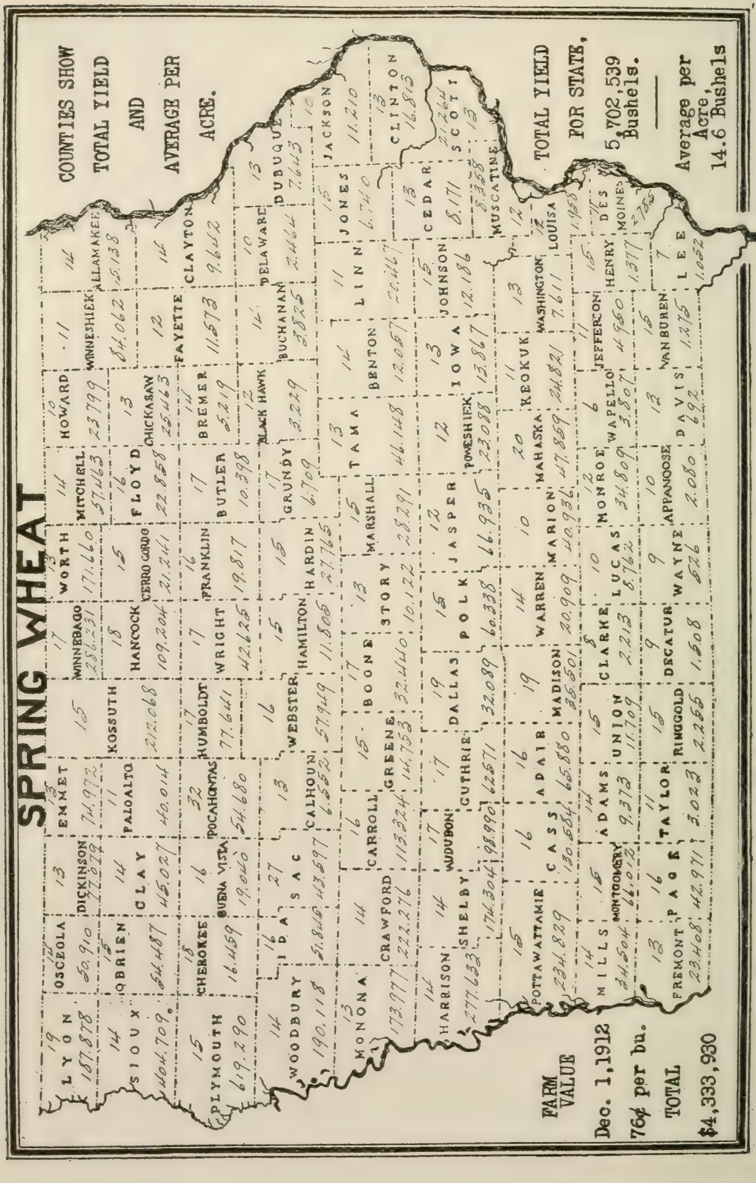
COUNTIES SHOW
TOTAL YIELD
AND
AVERAGE PER
ACRE.

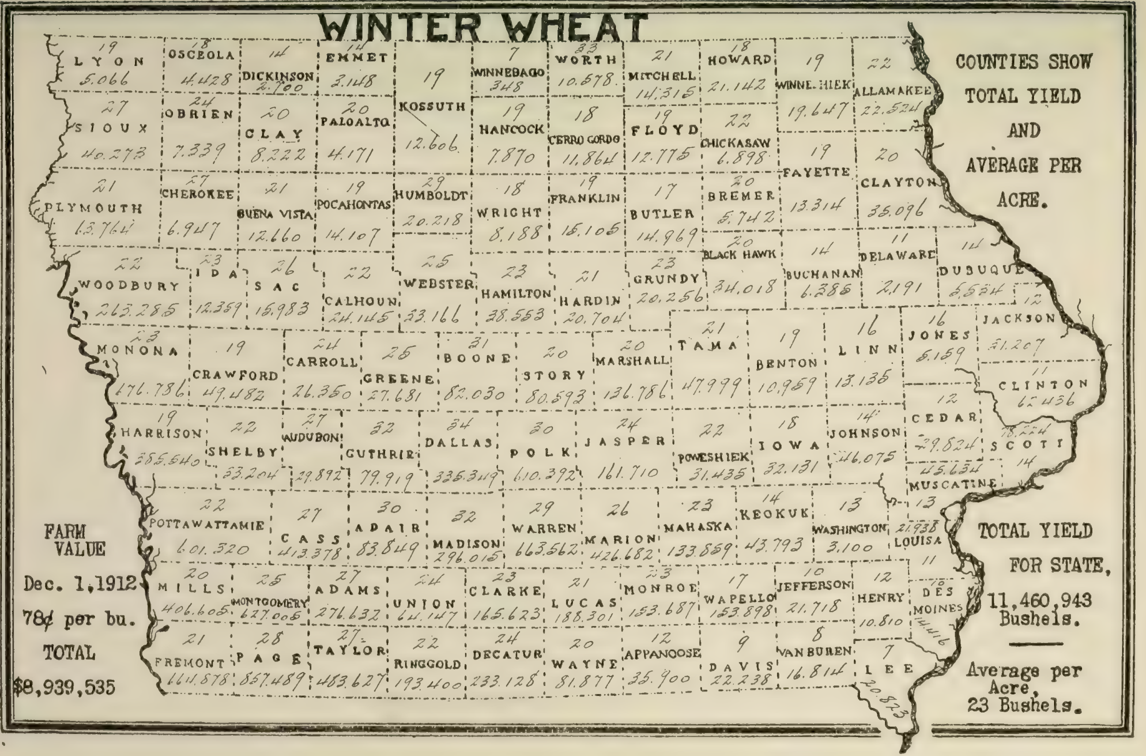

LYON 42 2.690.116
OSCEOLA 46 2.821.677
DICKINSON 41 1.420.931
EMMET 52 2.112.016
KOSSUTH 52 6.250.622
WINNEBAGO 49 1.749.567
WORTH 40 1.908.264
MITCHELL 44 3.346.532
HOWARD 38 1.846.922
WINNESHIEK 34 2.131.754
ALLAMAKEE 33 1.142.407
SIOUX 42 3.547.676
OBRIEN 52 3.928.774
CLAY 51 3.821.832
PALOALTO 48 2.953.524
HANCOCK 52 3.816.217
CERRO GORDO 47 3.423.136
FLOYD 41 2.927.264
CHICKASAW 39 1.873.178
FAYETTE 31 2.696.941
CLAYTON 36 2.001.645
PLYMOUTH 42 3.248.655
CHEROKEE 45 3.475.187
BUENA VISTA 49 4.012.957
POCAHONTAS 53 4.860.606
HUMBOLDT 52 3.132.318
WRIGHT 46 3.799.146
FRANKLIN 45 3.831.134
BUTLER 37 3.060.996
BREMER 39 2.002.354
BLACK HAWK 37 2.308.578
BUCHANAN 40 2.221.754
DELAWARE 38 1.748.398
DUBUQUE 33 1.676.943
WOODBURY 32 1.785.431
IDA 45 2.178.184
SAC 44 2.111.750
CALHOUN 46 4.229.516
WEBSTER 44 4.265.972
HAMILTON 44 3.412.392
HARDIN 42 2.970.506
GRUNDY 48 3.811.167
TAMA 44 3.061.590
BENTON 45 3.508.028
LINN 38 2.365.339
JONES 38 1.317.122
JACKSON 34 1.049.521
CLINTON 45 1.969.589
MONONA 24 506.993
CRAWFORD 34 2.053.982
CARROLL 40 2.636.101
GREENE 43 2.848.151
BOONE 47 2.940.431
STORY 45 2.786.752
MARSHALL 42 3.143.353
HARRISON 28 556.347
SHELBY 33 1.616.568
AUDUBON 38 1.620.911
GUTHRIE 40 1.994.983
DALLAS 49 2.617.034
POLK 46 1.752.076
JASPER 45 2.619.977
POWESHIEK 47 2.287.362
IOWA 43 1.887.607
JOHNSON 42 1.792.196
CEDAR 32 1.744.661
SCOTT 42 1.063.266
MUSCATINE 42 890.670
POTTAWATTAMIE 30 1.378.985
CASS 35 1.340.578
ADAIR 40 1.403.794
MADISON 51 1.372.932
WARREN 43 961.131
MARION 40 1.139.844
MAHASKA 45 1.726.441
KEOKUK 39 1.529.208
WASHINGTON 40 1.939.915
LOUISA 36 781.067
MILLS 30 471.109
MONTGOMERY 41 696.171
ADAMS 38 839.168
UNION 44 955.960
CLARKE 37 750.522
LUCAS 37 797.063
MONROE 21 406.323
WAPELLO 42 796.231
JEFFERSON 41 1.081.307
HENRY 32 1.071.547
DES MOINES 37 1.031.367
FREMONT 29 356.473
PAGE 41 773.374
TAYLOR 44 871.241
RINGGOLD 38 917.573
DECATUR 37 751.324
WAYNE 40 1.177.432
APPANOOSE 39 726.881
DAVIS 27 793.645
VANBUREN 41 866.328
LEE 40 920.229

FARM VALUE
Dec. 1, 1912
27¢ per bu.
TOTAL
$56,111,174

TOTAL YIELD
FOR STATE,
207,819,162
Bushels.

Average Per
Acre,
42.6 Bushels.


SPRING WHEAT
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.
TOTAL YIELD FOR STATE, 5,702,539 Bushels.
Average per Acre, 14.6 Bushels
FARM VALUE Dec. 1, 1912 76¢ per bu.
TOTAL $4,333,930
LYON 19 187.878
OSCEOLA 12 50.910
DICKINSON 13 77.279
EMMET 13 74.972
KOSSUTH 15 212.068
WINNEBAGO 17 286.231
WORTH 13 171.660
MITCHELL 14 57.463
HOWARD 10 23.799
WINNESHIEK 11 84.062
ALLAMAKEE 14 15.138
SIOUX 14 404.709
OBRIEN 15 54.487
CLAY 14 45.027
PALOALTO 11 40.014
HANCOCK 18 109.204
CERRO GORDO 15 21.241
FLOYD 16 22.858
CHICKASAW 13 25.463
FAYETTE 12 11.573
CLAYTON 14 9.642
PLYMOUTH 15 619.290
CHEROKEE 18 16.459
BUENA VISTA 16 19.040
POCAHONTAS 32 54.680
HUMBOLDT 17 77.641
WRIGHT 17 42.625
FRANKLIN 16 19.817
BUTLER 17 10.398
BREMER 14 5.219
BUCHANAN 14 3.825
DELAWARE 10 2.464
DUBUQUE 13 7.643
WOODBURY 14 190.118
IDA 16 51.846
SAC 27 43.597
CALHOUN 13 6.552
WEBSTER 16 57.949
HAMILTON 15 11.805
HARDIN 15 27.765
GRUNDY 17 6.709
BLACK HAWK 12 3.229
JACKSON 10 11.210
JONES 15 6.740
CLINTON 13 16.815
MONONA 13 173.977
CRAWFORD 14 222.276
CARROLL 16 113.324
GREENE 15 14.753
BOONE 17 32.440
STORY 13 10.122
MARSHALL 15 28.291
TAMA 13 46.148
BENTON 14 12.087
LINN 11 20.467
CEDAR 13 8.171
SCOTT 13 21.264
HARRISON 14 277.633
SHELBY 14 174.304
AUDUBON 17 98.990
GUTHRIE 17 62.571
DALLAS 19 32.089
POLK 15 60.338
JASPER 12 66.935
POWESHIEK 12 23.088
IOWA 13 13.867
JOHNSON 15 12.186
MUSCATINE 13 8.358
POTTAWATTAMIE 15 234.829
CASS 16 130.684
ADAIR 16 65.880
MADISON 19 36.501
WARREN 14 20.909
MARION 10 40.936
MAHASKA 20 47.869
KEOKUK 11 24.821
WASHINGTON 13 7.611
LOUISA 12 1.968
MILLS 14 34.504
MONTGOMERY 15 66.012
ADAMS 14 9.373
UNION 15 11.709
CLARKE 8 2.213
LUCAS 10 8.762
MONROE 12 34.809
WAPELLO 6 3.807
JEFFERSON 11 4.960
HENRY 15 1.377
DES MOINES 15 2.785
FREMONT 13 23.408
PAGE 16 42.971
TAYLOR 11 3.023
RINGGOLD 15 2.255
DECATUR 9 1.508
WAYNE 9 526
APPANOOSE 10 2.080
DAVIS 13 692
VANBUREN 15 1.275
LEE 7 1.052


WINTER WHEAT
19 LYON 5.066
18 OSCEOLA 4.428
14 DICKINSON 2.700
14 EMMET 3.148
19 KOSSUTH 12.606
7 WINNEBAGO 348
33 WORTH 10.578
21 MITCHELL 14.315
18 HOWARD 21.142
19 WINNESHIEK 19.647
22 ALLAMAKEE 22.524
27 SIOUX 40.273
24 OBRIEN 7.339
20 CLAY 8.222
20 PALOALTO 4.171
19 HANCOCK 7.870
18 CERRO GORDO 11.864
19 FLOYD 12.775
22 CHICKASAW 6.898
19 FAYETTE 13.314
20 CLAYTON 35.096
21 PLYMOUTH 13.764
27 CHEROKEE 6.947
21 BUENA VISTA 12.660
19 POCAHONTAS 14.107
29 HUMBOLDT 20.218
18 WRIGHT 8.188
19 FRANKLIN 16.105
17 BUTLER 14.969
20 BREMER 5.742
20 BLACK HAWK 34.018
14 BUCHANAN 6.385
11 DELAWARE 2191
14 DUBUQUE 5.554
22 WOODBURY 263.285
23 IDA 12.359
26 SAC 15.983
22 CALHOUN 24.145
25 WEBSTER 33.166
23 HAMILTON 38.553
21 HARDIN 20.704
23 GRUNDY 20.256
21 TAMA 47.999
19 BENTON 10.959
16 LINN 13.135
16 JONES 8.159
12 JACKSON 31.207
11 CLINTON 62.436
23 MONONA 176.786
19 CRAWFORD 49.482
24 CARROLL 26.350
25 GREENE 27.681
31 BOONE 82.030
20 STORY 80.593
20 MARSHALL 136.786
19 HARRISON 385.540
22 SHELBY 53.204
27 AUDUBON 29.892
32 GUTHRIE 79.919
34 DALLAS 335.349
30 POLK 610.392
24 JASPER 161.710
22 POWESHIEK 31.435
18 IOWA 32.131
14 JOHNSON 46.075
12 CEDAR 29.824
78.224 SCOTT 14
45.634 MUSCATINE 13
22 POTTAWATTAMIE 601.320
27 CASS 413.378
30 ADAIR 83.849
32 MADISON 296.015
29 WARREN 663.562
26 MARION 426.682
23 MAHASKA 133.859
14 KEOKUK 43.793
13 WASHINGTON 3.100
21.938 LOUISA 11
20 MILLS 406.605
25 MONTGOMERY 627.005
27 ADAMS 271.632
24 UNION 64.147
23 CLARKE 165.623
21 LUCAS 188.301
23 MONROE 153.687
17 WAPELLO 153.898
10 JEFFERSON 21.718
12 HENRY 10.810
15 DES MOINES 4.416
21 FREMONT 164.578
28 PAGE 857.489
27 TAYLOR 483.627
22 RINGGOLD 193.400
24 DECATUR 233.128
20 WAYNE 81.877
12 APPANOOSE 35.900
9 DAVIS 22.238
8 VAN BUREN 16.814
7 LEE 20.873

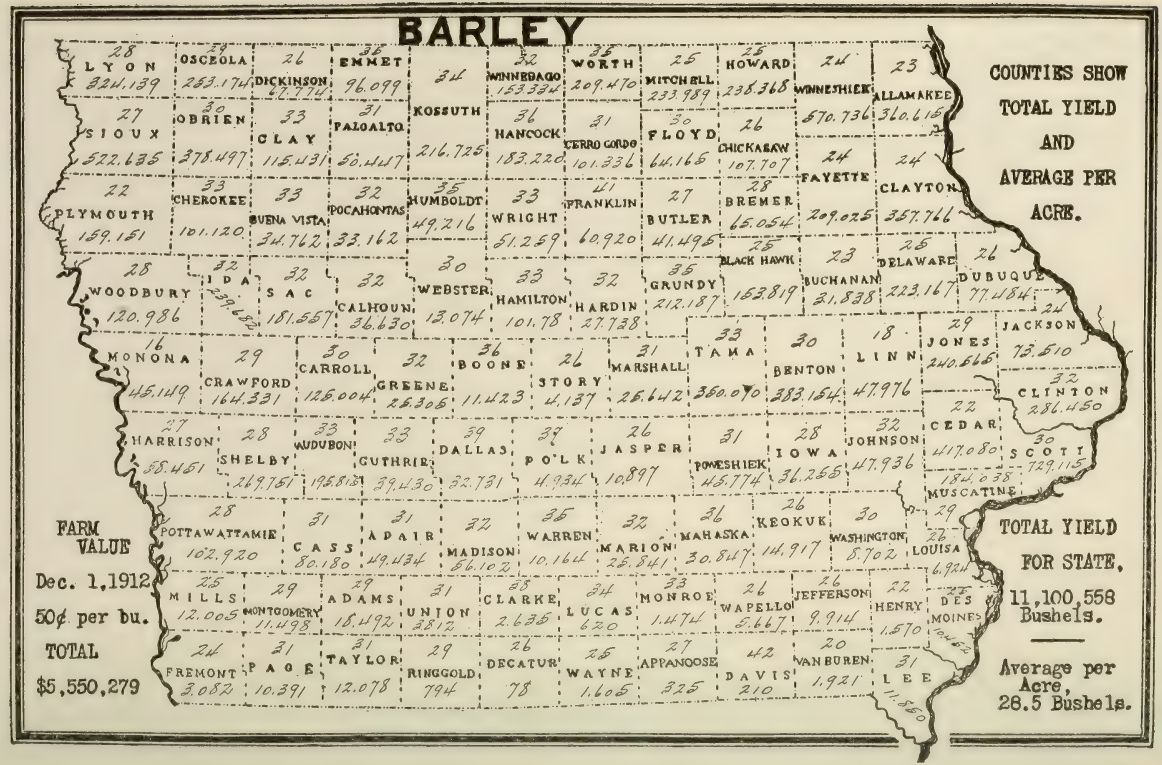
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.

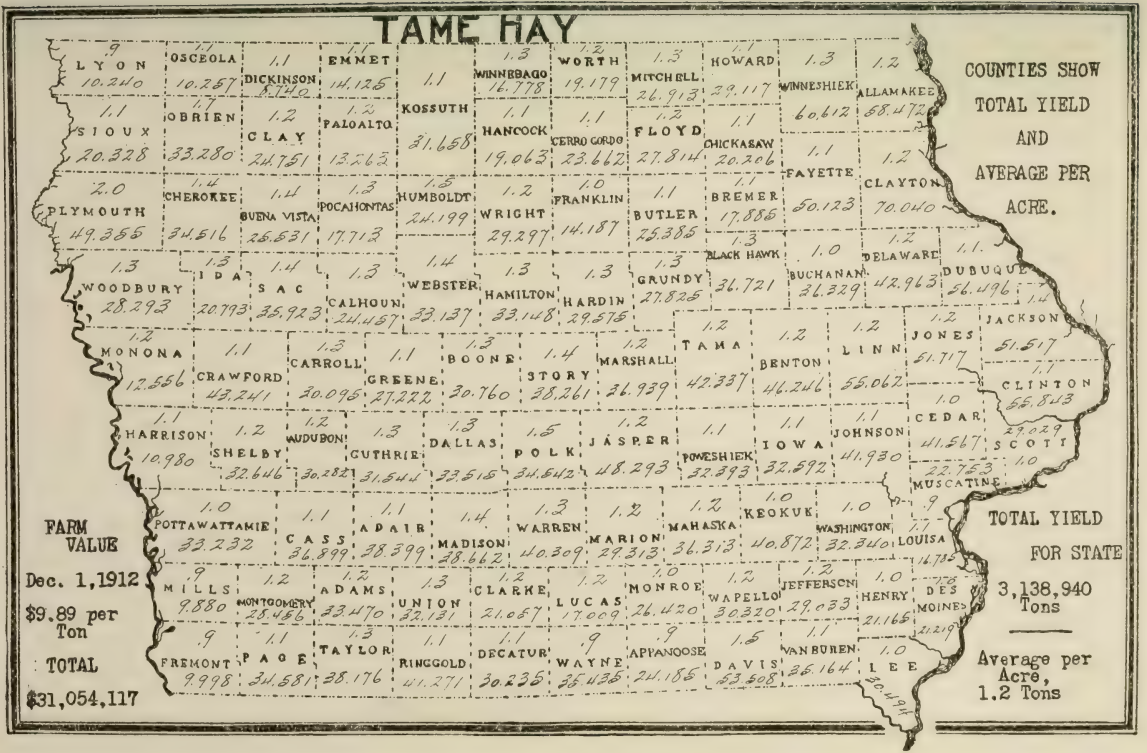
TOTAL YIELD FOR STATE, 11,460,943 Bushels.

Average per Acre, 23 Bushels.

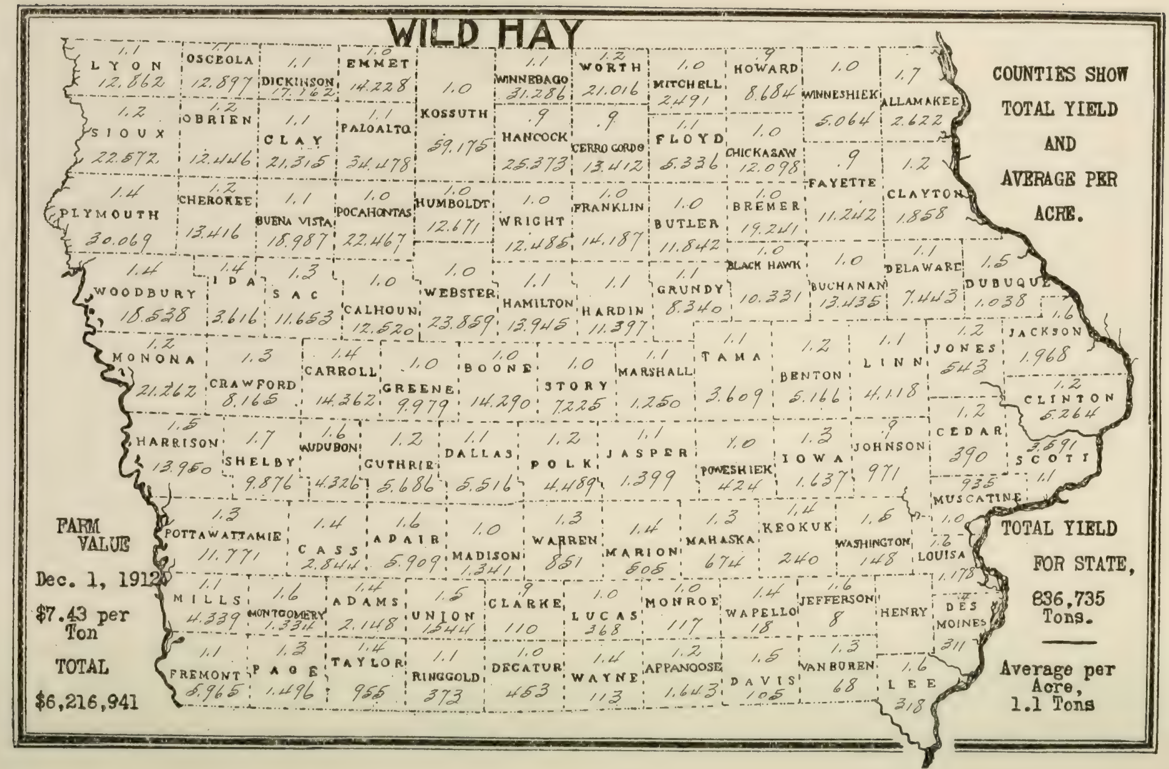
FARM VALUE Dec. 1, 1912 78¢ per bu.

TOTAL $8,939,535


BARLEY
28 LYON 324.139
29 OSCEOLA 253.174
26 DICKINSON 67.774
35 EMMET 96.099
34 KOSSUTH 216.725
32 WINNEBAGO 153.334
35 WORTH 209.470
25 MITCHELL 233.989
25 HOWARD 238.368
24 WINNESHIEK 570.736
23 ALLAMAKEE 360.615
27 SIOUX 522.635
30 OBRIEN 378.497
33 CLAY 115.431
31 PALOALTO 50.447
36 HANCOCK 183.220
31 CERRO GORDO 101.336
30 FLOYD 64.165
26 CHICKASAW 107.707
24 FAYETTE 209.025
24 CLAYTON 357.766
22 PLYMOUTH 159.151
33 CHEROKEE 101.120
33 BUENA VISTA 34.762
32 POCAHONTAS 33.162
35 HUMBOLDT 49.216
33 WRIGHT 51.259
41 FRANKLIN 60.920
27 BUTLER 41.495
28 BREMER 65.054
25 BLACK HAWK 153.819
23 BUCHANAN 21.838
25 DELAWARE 223.167
26 DUBUQUE 77.484
28 WOODBURY 120.986
32 IDA 239.682
32 SAC 181.557
32 CALHOUN 36.630
30 WEBSTER 13.074
33 HAMILTON 101.78
32 HARDIN 27.738
35 GRUNDY 212.187
33 TAMA 360.070
30 BENTON 383.154
18 LINN 47.976
29 JONES 240.565
24 JACKSON 73.510
16 MONONA 45.149
29 CRAWFORD 164.331
30 CARROLL 125.004
32 GREENE 25.305
36 BOONE 11.423
26 STORY 4.137
31 MARSHALL 25.642
32 CLINTON 286.450
27 HARRISON 58.451
28 SHELBY 269.751
33 AUDUBON 195.815
33 GUTHRIE 39.430
39 DALLAS 32.731
37 POLK 4.934
26 JASPER 10.897
31 POWESHIEK 45.774
28 IOWA 36.255
32 JOHNSON 47.936
22 CEDAR 417.080
30 SCOTT 729.115
184.038 MUSCATINE 29
28 POTTAWATTAMIE 102.920
31 CASS 80.180
31 ADAIR 49.434
32 MADISON 56.102
35 WARREN 10.164
32 MARION 25.841
36 MAHASKA 30.847
26 KEOKUK 14.917
30 WASHINGTON 8.702
26 LOUISA 6.924
25 MILLS 12.005
29 MONTGOMERY 11.498
29 ADAMS 16.492
31 UNION 3.812
38 CLARKE 2.635
34 LUCAS 620
33 MONROE 1.474
26 WAPELLO 5.667
26 JEFFERSON 9.914
22 HENRY 1.570
25 DES MOINES 10.462
24 FREMONT 3.082
31 PAGE 10.391
31 TAYLOR 12.078
29 RINGGOLD 794
26 DECATUR 78
25 WAYNE 1.605
27 APPANOOSE 325
42 DAVIS 210
20 VAN BUREN 1.921
31 LEE 11.550
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.
TOTAL YIELD FOR STATE, 11,100,558 Bushels.
Average per Acre, 28.5 Bushels.
FARM VALUE
Dec. 1,1912
50¢ per bu.
TOTAL
$5,550,279


TAME HAY
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.
TOTAL YIELD FOR STATE
3,138,940 Tons
Average per Acre, 1.2 Tons
FARM VALUE
Dec. 1, 1912
$9.89 per Ton
TOTAL
$31,054,117
.9 LYON 10.240
1.1 OSCEOLA 10.257
1.1 DICKINSON 8.740
1.1 EMMET 14.125
1.1 KOSSUTH 31.658
1.3 WINNEBAGO 16.778
1.2 WORTH 19.179
1.3 MITCHELL 26.913
1.1 HOWARD 29.117
1.3 WINNESHIEK 60.612
1.2 ALLAMAKEE 58.472
1.1 SIOUX 20.328
1.7 OBRIEN 33.280
1.2 CLAY 24.751
1.2 PALOALTO 13.263
1.1 HANCOCK 19.063
1.1 CERRO GORDO 23.662
1.2 FLOYD 27.814
1.1 CHICKASAW 20.206
1.1 FAYETTE 50.123
1.2 CLAYTON 70.040
2.0 PLYMOUTH 49.355
1.4 CHEROKEE 34.516
1.4 BUENA VISTA 25.531
1.3 POCAHONTAS 17.713
1.5 HUMBOLDT 24.199
1.2 WRIGHT 29.297
1.0 FRANKLIN 14.187
1.1 BUTLER 25.385
1.1 BREMER 17.885
1.3 BLACK HAWK 36.721
1.0 BUCHANAN 31.329
1.2 DELAWARE 42.963
1.1 DUBUQUE 56.496
1.3 WOODBURY 28.293
1.3 IDA 20.793
1.4 SAC 35.923
1.3 CALHOUN 24.457
1.4 WEBSTER 33.137
1.3 HAMILTON 33.148
1.3 HARDIN 29.575
1.3 GRUNDY 27.825
1.2 TAMA 42.337
1.2 BENTON 46.246
1.2 LINN 55.062
1.2 JONES 51.717
1.4 JACKSON 51.517
1.2 MONONA 12.556
1.1 CRAWFORD 43.241
1.3 CARROLL 30.095
1.1 GREENE 27.222
1.3 BOONE 30.760
1.4 STORY 38.261
1.2 MARSHALL 36.939
1.1 CLINTON 55.843
1.1 HARRISON 10.980
1.2 SHELBY 32.646
1.2 AUDUBON 30.282
1.3 GUTHRIE 31.544
1.3 DALLAS 33.518
1.5 POLK 34.642
1.2 JASPER 48.293
1.1 POWESHIEK 32.393
1.1 IOWA 32.592
1.1 JOHNSON 41.930
1.0 CEDAR 41.567
1.0 SCOTT 29.029
22.753 MUSCATINE .9
1.0 POTTAWATTAMIE 33.232
1.1 CASS 36.899
1.1 ADAIR 38.399
1.4 MADISON 28.662
1.3 WARREN 40.309
1.2 MARION 29.313
1.2 MAHASKA 36.313
1.0 KEOKUK 40.872
1.0 WASHINGTON 32.340
1.1 LOUISA 16.785
.9 MILLS 9.880
1.2 MONTGOMERY 25.456
1.2 ADAMS 33.470
1.3 UNION 32.131
1.2 CLARKE 21.057
1.2 LUCAS 17.009
1.0 MONROE 26.420
1.2 WAPELLO 30.320
1.2 JEFFERSON 29.033
1.0 HENRY 21.165
.76 DES MOINES 21.219
.9 FREMONT 9.998
1.1 PAGE 34.581
1.3 TAYLOR 38.176
1.1 RINGGOLD 41.271
1.1 DECATUR 30.235
.9 WAYNE 25.435
.9 APPANOOSE 24.185
1.5 DAVIS 53.508
1.1 VAN BUREN 35.164
1.0 LEE 30.494

WILD HAY


LYON 1.1 12.862
OSCEOLA 1.1 12.897
DICKINSON 1.1 17.162
EMMET 1.0 14.228
KOSSUTH 1.0 59.175
WINNEBAGO 1.1 31.286
WORTH 1.2 21.016
MITCHELL 1.0 2491
HOWARD .9 8.684
WINNESHIEK 1.0 5.064
ALLAMAKEE 1.7 2.622
SIOUX 1.2 22.572
OBRIEN 1.2 12.446
CLAY 1.1 21.315
PALOALTO 1.1 34.478
HANCOCK .9 25.373
CERRO GORDO .9 13.412
FLOYD 1.1 5.336
CHICKASAW 1.0 12.098
FAYETTE .9 11.242
CLAYTON 1.2 1.858
PLYMOUTH 1.4 30.069
CHEROKEE 1.2 13.416
BUENA VISTA 1.1 18.987
POCAHONTAS 1.0 22.467
HUMBOLDT 1.0 12.671
WRIGHT 1.0 12.485
FRANKLIN 1.0 14.187
BUTLER 1.0 11.842
BREMER 1.0 19.241
BLACK HAWK 1.0 10.331
BUCHANAN 1.0 13.435
DELAWARE 1.1 7.443
DUBUQUE 1.5 1.038
WOODBURY 1.4 18.538
IDA 1.4 3.616
SAC 1.3 11.653
CALHOUN 1.0 12.520
WEBSTER 1.0 23.859
HAMILTON 1.1 13.945
HARDIN 1.1 11.397
GRUNDY 1.1 8.340
JACKSON 1.6 1.968
MONONA 1.2 21.262
CRAWFORD 1.3 8.165
CARROLL 1.4 14.362
GREENE 1.0 9.979
BOONE 1.0 14.290
STORY 1.0 7.225
MARSHALL 1.1 1.250
TAMA 1.1 3.609
BENTON 1.2 5.166
LINN 1.1 4.118
JONES 1.2 543
CLINTON 1.2 5.264
HARRISON 1.5 13.950
SHELBY 1.7 9.876
AUDUBON 1.6 4.326
GUTHRIE 1.2 5.686
DALLAS 1.1 5.516
POLK 1.2 4.489
JASPER 1.1 1.399
POWESHIEK 1.0 424
IOWA 1.3 1.637
JOHNSON .9 971
CEDAR 1.2 390
SCOTT 1.1 3.591
MUSCATINE 1.0 935
POTTAWATTAMIE 1.3 11.771
CASS 1.4 2.844
ADAIR 1.6 5.909
MADISON 1.0 1.341
WARREN 1.3 851
MARION 1.4 505
MAHASKA 1.3 674
KEOKUK 1.4 240
WASHINGTON 1.6 148
LOUISA 1.6 1.178
MILLS 1.1 4.339
MONTGOMERY 1.6 1.334
ADAMS 1.4 2.148
UNION 1.5 1.544
CLARKE .9 110
LUCAS 1.0 368
MONROE 1.0 117
WAPELLO 1.4 18
JEFFERSON 1.6 8
HENRY
DES MOINES 311
FREMONT 1.1 5.965
PAGE 1.3 1.496
TAYLOR 1.4 955
RINGGOLD 1.1 373
DECATUR 1.0 453
WAYNE 1.4 113
APPANOOSE 1.2 1.643
DAVIS 1.5 105
VAN BUREN 1.3 68
LEE 1.6 318

COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.

TOTAL YIELD FOR STATE, 836,735 Tons.

Average per Acre, 1.1 Tons

FARM VALUE

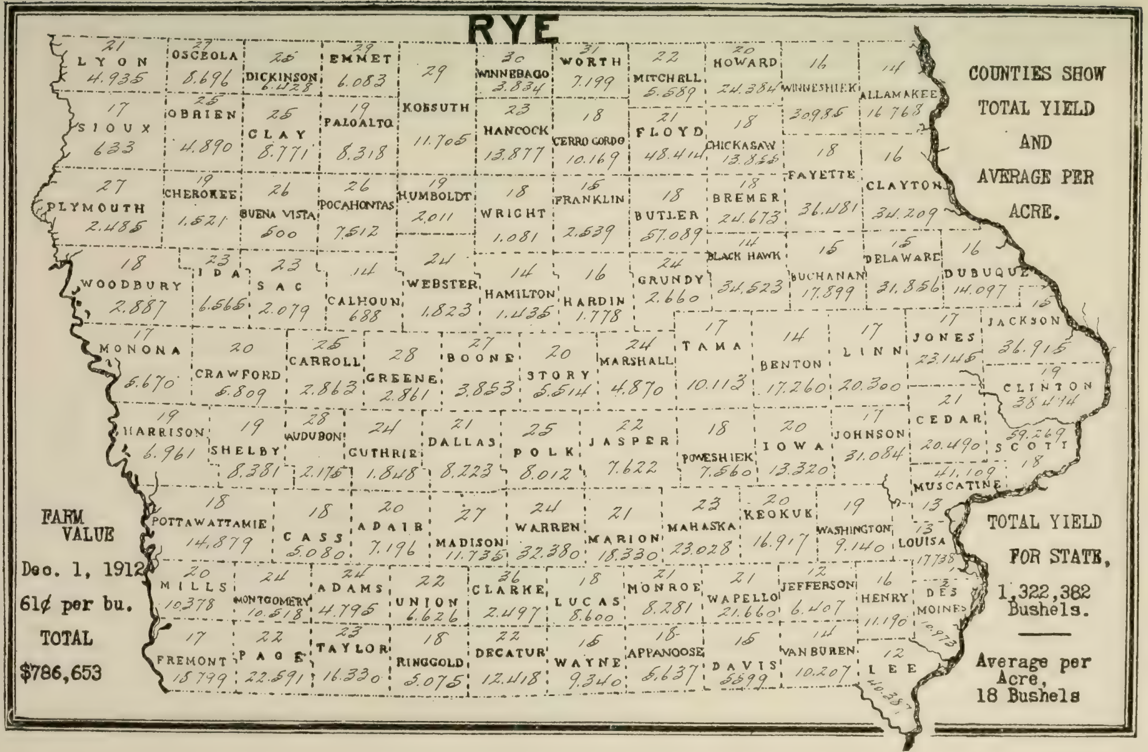
Dec. 1, 1912

$7.43 per Ton

TOTAL

$6,216,941

RYE


21
LYON
4.935
27
OSCEOLA
8.696
25
DICKINSON
6.428
29
EMMET
6.083
29
KOSSUTH
11.705
30
WINNEBAGO
3.834
31
WORTH
7.199
22
MITCHELL
5.589
20
HOWARD
24.384
16
WINNESHIEK
30.985
14
ALLAMAKEE
16 768
17
SIOUX
633
25
OBRIEN
4.890
25
CLAY
8.771
19
PALOALTO
8.318
23
HANCOCK
13.877
18
CERRO GORDO
10.169
21
FLOYD
48.414
18
CHICKASAW
13.855
18
FAYETTE
36.481
16
CLAYTON
34.209
27
PLYMOUTH
2.485
19
CHEROKEE
1.521
26
BUENA VISTA
500
26
POCAHONTAS
7.512
19
HUMBOLDT
2.011
18
WRIGHT
1.081
15
FRANKLIN
2.539
18
BUTLER
57.089
18
BREMER
24.673
14
BLACK HAWK
34.523
15
BUCHANAN
17.899
15
DELAWARE
31.856
16
DUBUQUE
14.097
18
WOODBURY
2.887
23
IDA
6.565
23
SAC
2.079
14
CALHOUN
688
24
WEBSTER
1.823
14
HAMILTON
1.435
16
HARDIN
1.778
24
GRUNDY
2.660
17
MONONA
5.670
20
CRAWFORD
6.809
25
CARROLL
2.863
28
GREENE
2.861
27
BOONE
3.853
20
STORY
5.514
24
MARSHALL
4.870
17
TAMA
10.113
14
BENTON
17.260
17
LINN
20.300
17
JONES
23.145
15
JACKSON
36.915
19
CLINTON
38 414
19
HARRISON
6.961
19
SHELBY
8.381
28
AUDUBON
2.175
24
GUTHRIE
1.848
21
DALLAS
8.223
25
POLK
8.012
22
JASPER
7.622
18
POWESHIEK
7.560
20
IOWA
13.320
17
JOHNSON
31.084
21
CEDAR
20.490
59.269
SCOTT
18
41.109
MUSCATINE
13
18
POTTAWATTAMIE
14.879
18
CASS
5.080
20
ADAIR
7.196
27
MADISON
11.735
24
WARREN
32.380
21
MARION
18.330
23
MAHASKA
23.028
20
KEOKUK
16.917
19
WASHINGTON
9.140
13
LOUISA
17738
20
MILLS
10.378
24
MONTGOMERY
10.518
24
ADAMS
4.795
22
UNION
6.626
36
CLARKE
2.497
18
LUCAS
8.600
21
MONROE
8.281
21
WAPELLO
21.660
12
JEFFERSON
6.407
16
HENRY
11.190
2
DES MOINES
10.973
17
FREMONT
15 799
22
PAGE
22.591
23
TAYLOR
16.330
18
RINGGOLD
5.075
22
DECATUR
12.418
15
WAYNE
9.340
18
APPANOOSE
6.637
15
DAVIS
5599
14
VAN BUREN
10.207
12
LEE
40.387

COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.

TOTAL YIELD FOR STATE,
1,322,382 Bushels.

Average per Acre,
18 Bushels

FARM VALUE
Dec. 1, 1912
61¢ per bu.
TOTAL
$786,653

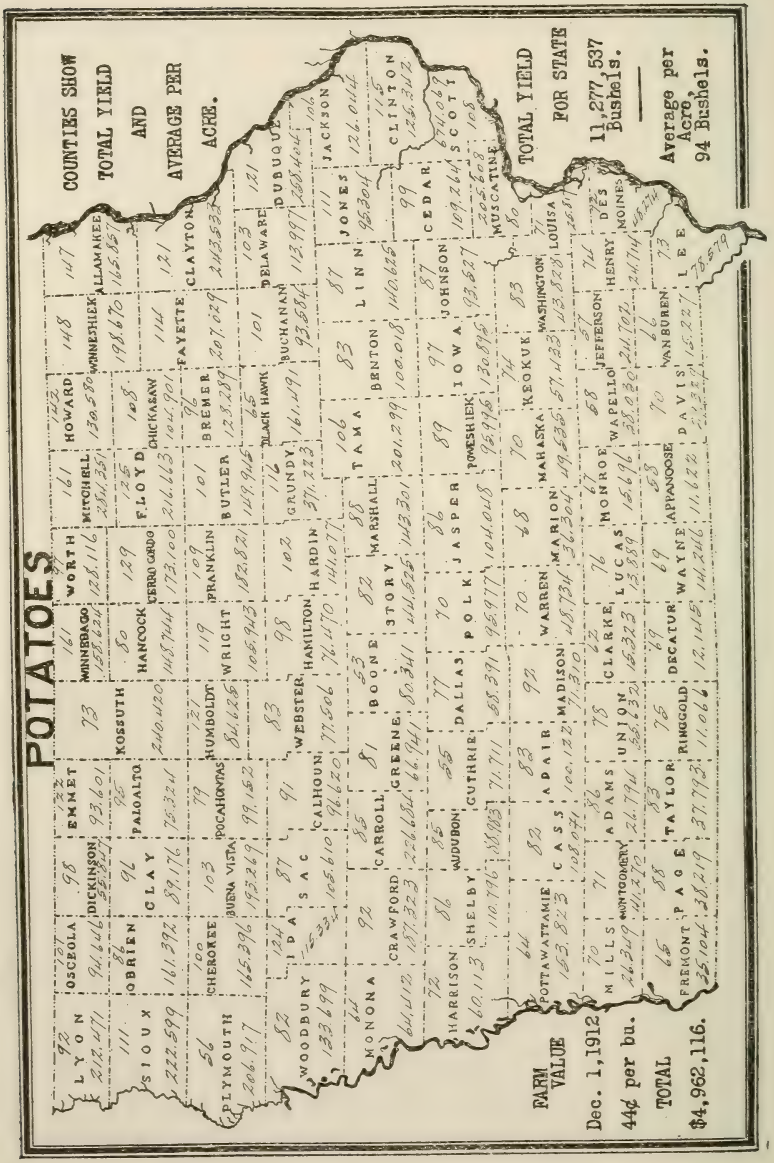

POTATOES
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.
TOTAL YIELD FOR STATE 11,277,537 Bushels.
Average per Acre, 94 Bushels.
FARM VALUE Dec. 1, 1912 44¢ per bu.
TOTAL $4,962,116.
LYON 92 212,471
OSCEOLA 107 94,646
DICKINSON 98 55,847
EMMET 122 93,601
KOSSUTH 73 240,420
WINNEBAGO 161 158,624
WORTH 97 128,116
MITCHELL 161 284,351
HOWARD 122 130,580
WINNESHIEK 148 198,670
ALLAMAKEE 147 165,857
SIOUX 111 222,599
OBRIEN 86 161,392
CLAY 96 89,176
PALOALTO 95 75,324
HANCOCK 80 148,744
CERRO GORDO 129 173,100
FLOYD 125 216,663
CHICKASAW 108 104,901
FAYETTE 114 207,029
CLAYTON 121 243,532
PLYMOUTH 56 206,917
CHEROKEE 100 165,396
BUENA VISTA 103 193,269
POCAHONTAS 79 99,152
HUMBOLDT 121 84,626
WRIGHT 119 108,943
FRANKLIN 109 182,821
BUTLER 101 149,945
BREMER 96 123,289
BLACK HAWK 65 161,491
BUCHANAN 101 93,584
DELAWARE 103 113,997
DUBUQUE 121 258,404
WOODBURY 82 133,699
IDA 124 75,334
SAC 87 105,610
CALHOUN 91 96,620
WEBSTER 83 77,506
HAMILTON 98 76,470
HARDIN 102 141,077
GRUNDY 116 37,223
TAMA 106 201,299
BENTON 83 100,018
LINN 87 140,625
JONES 111 95,304
JACKSON 106 126,044
CLINTON 115 125,342
MONONA 64 64,412
CRAWFORD 92 187,323
CARROLL 85 226,684
GREENE 81 66,941
BOONE 53 80,341
STORY 82 44,525
MARSHALL 88 143,301
HARRISON 72 60,113
SHELBY 86 110,796
AUDUBON 85 58,983
GUTHRIE 55 71,711
DALLAS 77 68,391
POLK 70 95,977
JASPER 86 104,048
POWESHIEK 89 95,996
IOWA 97 130,895
JOHNSON 87 93,527
CEDAR 99 109,264
SCOTT 108 674,069
MUSCATINE 80 205,608
POTTAWATTAMIE 64 153,823
CASS 82 108,071
ADAIR 83 100,122
MADISON 92 71,310
WARREN 70 48,734
MARION 68 36,304
MAHASKA 70 49,535
KEOKUK 74 57,433
WASHINGTON 83 43,828
LOUISA 71 25,81
MILLS 70 26,349
MONTGOMERY 71 41,270
ADAMS 86 21,794
UNION 78 35,632
CLARKE 62 15,323
LUCAS 76 13,889
MONROE 67 15,696
WAPELLO 68 38,030
JEFFERSON 57 24,702
HENRY 74 24,714
DES MOINES 72 48,274
FREMONT 65 35,104
PAGE 88 38,219
TAYLOR 83 37,793
RINGGOLD 75 11,066
DECATUR 69 12,145
WAYNE 69 14,246
APPANOOSE 58 11,622
DAVIS 70 21,32
VAN BUREN 66 15,227
LEE 73 78,579

TABLE NO. 4

Number of horses all ages, mules all ages, and number of swine July 1, 1912. Number dairy cows kept for milk, number other cattle not kept for milk and total number cattle all ages. Number sheep kept on farms, number shipped in for feeding and number sold for slaughter. Number pounds wool clipped. Total number all varieties poultry on farms July 1, 1911, and total number dozen eggs received (estimated), by counties for the year of 1912.

Counties	Horses (all ages)	Mules (all ages)	Hogs on farms July 1, 1912	Cattle			Sheep				Poultry	
				Dairy cows and heifers kept for milk	Other cattle not kept for milk	Cattle (all ages)	No. sheep kept on farms	No. sheep shipped in for feeding	No. sheep sold for slaughter	No pounds wool clipped	No. all varieties on farms July 1, 1911	No. dozen eggs received (estimated)
Adair	16,061	950	104,261	10,606	32,108	45,185	9,673	7,925	10,382	68,092	423,958	875,560
Adams	11,461	967	80,357	5,925	23,228	30,464	12,632	2,750	7,053	46,307	348,307	883,887
Allamakee	11,443	64	61,814	17,064	22,906	39,612	9,888	459	5,613	58,907	265,317	826,991
Appanoose	8,825	651	25,499	5,885	11,353	19,806	12,647	1,027	9,829	64,379	248,754	615,836
Audubon	13,344	387	85,526	10,338	24,892	36,238	2,605	4,633	6,129	18,210	324,621	859,327
Benton	19,141	447	127,273	12,012	34,765	52,008	6,214	6,040	5,637	33,652	435,699	1,115,527
Black Hawk	14,519	122	107,695	18,017	25,761	43,800	4,125	58	1,649	16,847	400,420	1,171,901
Boone	15,386	506	65,716	12,090	17,954	34,016	3,391	1,285	1,898	8,278	476,722	1,272,946
Bremer	11,546	91	68,268	20,370	16,076	36,416	2,247	120	895	13,825	353,138	1,047,620
Buchanan	13,687	268	84,001	14,880	26,617	41,497	5,354	524	2,273	32,084	432,569	1,235,745
Buena Vista	13,936	245	91,132	10,886	23,721	41,175	1,232	1,155	411	7,662	286,790	864,227
Butler	15,015	271	88,987	17,239	26,388	44,368	3,396	744	1,693	21,043	383,319	1,108,343
Calhoun	15,689	595	66,524	8,920	14,034	26,627	2,311	1,442	1,311	18,570	322,486	779,343
Carroll	14,093	504	100,939	11,925	26,929	39,961	1,891	1,437	1,435	9,266	412,429	1,115,815
Cass	16,347	1,087	119,762	8,516	30,786	41,640	7,514	5,002	10,337	50,923	396,290	978,155
Cedar	16,065	783	140,572	9,970	32,231	43,655	12,290	12,644	16,434	92,150	312,312	1,203,916
Cerro Gordo	12,192	91	63,695	11,927	22,432	37,949	2,389	120	1,138	14,859	270,670	799,658
Cherokee	14,882	412	121,035	7,675	34,551	42,246	1,095	4,500	4,437	10,792	295,843	767,306
Chickasaw	9,778	38	51,175	14,689	13,674	32,843	2,280	----------	1,332	13,674	481,085	824,885
Clarke	11,212	541	43,505	5,858	15,536	21,878	3,918	350	1,789	21,868	285,706	683,662
Clay	12,605	184	73,065	10,905	25,854	36,759	2,926	2,024	3,155	18,046	275,618	873,300
Clayton	17,092	89	124,983	24,364	24,171	49,044	9,908	900	5,432	66,767	463,082	1,401,537
Clinton	18,488	305	135,652	17,493	39,365	56,868	2,284	2,329	7,045	17,311	355,399	1,086,651
Crawford	16,747	687	148,521	11,113	31,125	51,502	2,885	7,214	7,501	14,343	370,608	974,442
Dallas	16,382	852	93,852	8,819	22,107	30,926	6,202	8,455	----------	29,770	499,271	1,168,605
Davis	13,105	735	38,765	15,433	14,946	21,168	58,167	978	19,308	407,347	317,527	828,032
Decatur	12,116	896	43,547	7,195	14,606	26,242	12,634	1,021	5,608	58,020	341,627	895,727
Delaware	13,676	213	107,930	24,046	19,765	43,811	5,052	2,939	6,141	32,242	385,334	1,245,109

TABLE NO. 4—CONTINUED

Counties	Horses (all ages)	Mules (all ages)	Hogs on farms July 1, 1912	Cattle			Sheep				Poultry	
				Dairy cows and heifers kept for milk	Other cattle not kept for milk	Cattle (all ages)	No. sheep kept on farms	No. sheep shipped in for feeding	No sheep sold for slaughter	No. pounds wool clipped	No all varieties on farms July 1, 1912	No. dozen eggs received (estimated)
Des Moines	10,997	364	49,728	7,157	12,000	19,157	3,840	594	2,925	19,950	346,607	833,877
Dickinson	6,765	169	30,644	6,063	13,566	21,634	3,307	818	1,433	20,869	164,349	375,832
Dubuque	12,432	72	101,266	18,159	21,027	38,684	4,848	55	2,579	33,407	348,979	854,972
Emmet	7,550	147	34,671	6,732	11,189	18,706	1,795	583	1,105	11,068	155,213	474,559
Fayette	16,709	167	108,075	25,054	30,689	58,456	5,908	44	3,079	42,860	570,838	1,652,452
Floyd	12,670	82	61,863	10,221	23,270	33,451	7,055	2,195	4,870	40,606	319,028	963,453
Franklin	14,611	217	90,428	12,697	26,322	39,418	4,256	13,556	10,583	20,476	375,751	909,384
Fremont	9,384	2,214	63,501	9,302	15,292	23,895	2,402	2,538	870	6,109	266,046	651,445
Greene	15,763	435	86,641	8,682	22,459	34,209	2,648	4,809	4,925	9,641	447,182	1,127,197
Grundy	20,502	274	87,917	11,287	32,575	43,076	1,739	7,036	8,194	64,914	360,097	1,215,338
Guthrie	16,011	589	93,282	10,718	27,825	38,543	5,318	3,143	3,484	26,257	401,311	876,489
Hamilton	16,762	400	85,571	11,436	22,637	36,225	3,927	281	1,925	12,504	482,011	1,011,656
Hancock	11,693	247	55,966	12,343	19,899	32,214	1,901	31	1,037	13,911	303,039	683,288
Hardin	14,582	182	84,741	11,859	19,497	36,578	3,887	2,046	5,041	23,374	338,842	1,175,628
Harrison	13,509	1,258	97,934	11,282	17,318	26,711	791	19,025	10,496	19,290	353,037	962,749
Henry	12,155	734	61,681	5,549	11,790	20,948	28,247	748	12,537	159,708	313,667	1,009,140
Howard	9,594	67	55,930	12,972	18,901	31,873	5,761	578	3,278	23,961	245,356	614,147
Humboldt	10,342	144	68,484	8,031	17,475	27,399	2,725	2,198	2,666	10,008	274,435	684,083
Ida	10,839	536	98,246	6,596	24,409	35,055	1,120	7,311	6,198	5,648	265,228	606,506
Iowa	16,382	863	110,452	10,226	31,071	46,854	5,612	1,354	4,076	41,222	465,980	1,140,992
Jackson	13,901	230	89,321	16,191	26,686	45,087	4,490	1,066	1,927	22,668	321,743	690,251
Jasper	21,538	782	131,089	10,118	35,553	45,359	6,483	1,530	5,018	44,323	587,305	1,440,668
Jefferson	11,989	256	51,263	6,862	13,893	20,757	8,705	123	3,270	46,276	309,159	992,931
Johnson	16,075	716	105,843	9,456	20,452	35,622	7,809	806	5,279	55,738	450,996	1,218,252
Jones	14,288	457	114,831	15,813	27,243	48,427	5,034	1,667	3,173	31,305	374,744	1,130,221
Keokuk	17,779	786	111,948	10,833	22,066	34,913	7,925	3,411	4,789	43,818	526,847	1,808,211
Kossuth	20,723	319	101,485	19,333	26,287	51,418	5,698	3,570	5,408	26,168	560,605	1,692,895
Lee	12,032	637	39,403	7,535	11,260	20,816	23,011	2,213	9,638	167,435	288,689	1,027,278
Linn	18,638	449	108,311	16,225	31,244	49,073	11,807	4,148	8,360	65,543	512,103	1,301,060
Louisa	10,007	344	56,403	4,082	14,965	18,548	1,924	1,348	1,932	10,752	225,394	625,359
Lucas	10,421	599	34,757	6,796	15,619	20,826	13,302	4,029	7,269	72,380	307,851	960,862
Lyon	13,719	136	87,760	11,369	19,818	31,828	2,616	1,895	1,794	16,390	225,545	648,706
Madison	11,914	803	81,605	7,925	24,579	36,541	10,253	5,091	9,316	48,551	436,890	1,068,354

Mahaska	17,293	907	110,421	9,307	13,298	28,481	12,705	8,589	12,288	99,505	448,240	1,428,778
Marion	14,916	835	84,627	7,360	18,678	28,240	9,317	31,552	30,616	57,720	440,586	1,197,920
Marshall	16,955	808	105,634	10,327	27,154	37,527	8,996	7,621	7,565	40,708	464,490	935,130
Mills	8,621	961	63,570	4,132	14,129	19,935	919	6,783	4,597	3,025	216,517	438,130
Mitchell	10,611	99	52,133	9,877	19,616	33,325	2,627	179	1,079	15,183	302,734	820,111
Monona	14,046	1,513	86,216	8,374	19,217	27,646	233	1,533	1,002	1,692	326,834	866,842
Monroe	7,791	868	27,026	6,763	11,577	19,902	6,982	2,079	6,284	48,855	321,672	867,800
Montgomery[1]	10,344	1,025	85,066	5,899	19,692	50,295	2,403	3,719	4,595	9,722	266,409	853,505
Muscatine	12,052	438	66,474	7,886	15,381	26,645	3,136	19	2,142	21,386	316,165	792,385
O'Brien	16,551	268	95,305	12,002	28,267	41,275	6,637	1,495	5,229	43,416	300,348	824,649
Osceola	8,837	154	42,522	7,630	11,842	22,989	3,018	1,138	2,043	11,972	158,064	565,366
Page	15,346	1,207	107,244	8,701	27,600	36,301	5,788	7,372	6,849	35,774	438,720	1,102,788
Palo Alto	10,519	195	52,061	11,902	15,409	29,608	3,196	1,314	2,261	16,875	283,487	642,681
Plymouth	21,011	581	150,188	12,466	38,585	48,885	4,035	863	688	12,686	401,828	1,355,389
Pocahontas	13,511	389	64,974	9,743	16,660	29,390	2,653	1,858	2,332	11,334	385,241	932,478
Polk	13,800	607	64,783	8,912	14,316	26,578	3,075	4,525	6,884	11,380	733,838	1,071,842
Pottawattamie	21,815	2,104	170,708	13,578	35,781	49,459	4,522	17,987	12,387	27,130	601,762	1,624,969
Poweshiek	18,112	772	114,858	9,412	23,559	41,519	4,839	2,743	2,490	23,345	446,039	1,012,677
Ringgold	12,282	1,066	55,974	7,403	21,333	29,085	9,409	594	4,336	54,516	351,917	1,018,277
Sac	15,456	452	102,588	9,458	33,108	43,903	5,718	8,477	11,515	27,173	338,844	812,431
Scott	12,139	482	84,560	13,983	16,657	34,828	783	250	658	5,116	379,051	1,378,082
Shelby	16,855	634	120,576	9,437	28,560	48,101	1,568	10,107	7,294	11,168	395,659	1,076,977
Sioux	19,552	299	146,148	16,483	28,308	56,032	3,181	3,087	3,656	15,140	363,980	1,058,968
Story	16,555	570	80,569	10,102	20,722	32,290	1,879	3,861	3,893	12,879	432,105	1,502,803
Tama	19,503	338	112,889	12,183	38,910	61,098	4,174	2,264	4,059	26,956	529,034	1,342,182
Taylor	13,835	1,053	75,412	7,070	21,198	28,447	10,914	4,482	7,422	68,152	305,361	883,773
Union	11,206	758	55,176	6,865	17,366	28,041	4,176	1,586	2,873	24,343	318,391	745,308
Van Buren	11,854	986	44,971	6,499	10,657	20,574	44,239	10,498	30,847	325,864	292,113	1,238,830
Wapello	9,870	440	46,107	7,126	10,342	17,894	12,184	712	7,344	79,452	298,855	728,113
Warren	15,200	608	72,042	8,289	19,030	30,268	7,194	3,512	8,450	50,937	355,226	985,333
Washington	15,469	921	101,283	6,548	23,654	31,437	7,508	1,871	5,105	39,339	411,033	1,226,695
Wayne	13,907	1,192	55,756	7,257	19,738	27,414	11,378	2,555	5,686	52,760	331,458	886,500
Webster	16,830	542	71,306	12,568	17,910	32,155	1,428	3,310	1,828	8,422	411,060	1,054,777
Winnebago	8,867	172	42,162	12,147	13,296	25,443	1,153	92	849	6,877	242,376	710,807
Winneshiek	16,074	57	91,844	21,500	26,228	53,206	13,352	3,719	10,619	75,400	391,848	1,178,124
Woodbury	19,814	995	111,426	10,595	30,489	41,084	3,642	7,240	6,616	26,262	346,019	1,083,466
Worth	9,087	78	45,360	11,955	16,744	29,562	1,827	----------	674	9,815	235,600	693,726
Wright	12,839	259	69,927	10,451	25,382	29,817	3,512	643	1,621	20,014	419,358	678,767
Total	1,389,534	54,339	8,234,977	1,085,354	2,185,931	3,488,718	647,785	347,944	541,015	3,974,660	36,092,390	97,549,731

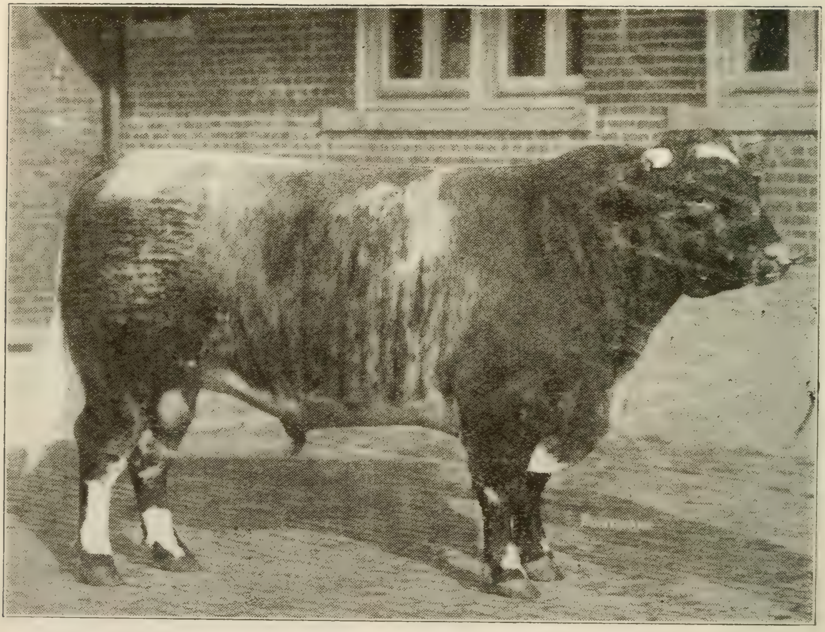
TABLE NO. 5

Acreage in sweet corn, pop corn, and acreage and total yield of timothy and clover seed, by counties, for the year of 1912.

Counties	Sweet Corn		Pop Corn		Timothy Seed		Clover Seed	
	Acres	Tons gathered for canning	Acres	Total bushels	Acres	Total bushels	Acres	Total bushels
Adair	26	95	178	3,592	15,511	56,422	177	220
Adams	--------	--------	9	360	5,329	22.509	374	319
Allamakee	2	10	1	30	5,204	17,964	3,625	7,071
Appanoose	21	165	15	200	14,533	66,539	52	67
Audubon	356	1,329	6	--------	3,527	15,174	188	58
Benton	6,274	18,156	10	135	5,304	28,460	115	102
Black Hawk	3,400	1,026	89	1,523	1,517	7,217	78	71
Boone	18	162	115	4,219	837	4,490	235	345
Bremer	1,997	6,915	7	249	471	1,965	10	7
Buchanan	846	2,300	2	63	2,311	10,146	50	63
Buena Vista	845	3,119	52	2,241	1,016	5,650	41	64
Butler	119	138	3	183	2,024	8,372	64	98
Calhoun	523	2,277	17	576	754	3,455	134	114
Carroll	13	35	158	5,317	1,642	7,062	299	419
Cass	1,362	3,801	133	3,187	3,992	13,506	435	364
Cedar	369	1,226	6	--------	4,561	22,923	33	84
Cerro Gordo	--------	--------	16	333	1,524	7,129	47	64
Cherokee	3	--------	69	2,871	1,654	9,919	1,126	423
Chickasaw	--------	--------	--------	--------	5,350	19,244	10	20
Clarke	19	139	13	304	25,510	125,580	669	787
Clay	27	255	237	6,609	7,550	35,520	72	49
Clayton	661	2,346	--------	--------	3,108	12,473	6,006	9,521
Clinton	--------	--------	9	151	1,564	6,936	83	236
Crawford	3	60	113	3,379	1,119	4,511	161	202
Dallas	195	1,523	2	74	1,101	6,282	321	319
Davis	13	14	--------	--------	22,919	93,061	65	--------
Decatur	7	270	74	2,644	21,946	109,673	580	577
Delaware	598	1,145	3	81	3,479	14,658	547	631
Des Moines	42	72	5	140	1,950	9,214	1,076	1,726
Dickinson	15	100	1,212	12,670	3,482	13,804	1	8
Dubuque	450	1,034	3	60	1,235	4,047	2,191	3,835
Emmet	--------	--------	21	670	1,232	5,397	--------	--------
Fayette	1,035	3,509	9	102	6,057	20,885	375	599
Floyd	33	280	63	1,570	4,048	18,314	5	10
Franklin	922	2,928	34	936	1,895	8,159	--------	--------
Fremont	896	2,554	57	251	345	926	168	187
Greene	1	3	99	3,525	681	2,979	133	101
Grundy	--------	--------	--------	--------	2,189	12,997	70	62
Guthrie	116	295	89	4,234	10,175	43,666	354	445
Hamilton	14	21	12	303	672	3,438	54	37
Hancock	211	580	18	477	1,496	7,580	--------	--------
Hardin	5	50	--------	--------	712	6,290	51	122
Harrison	5	14	18	467	366	1,338	102	103
Henry	747	2,133	--------	--------	2,587	12,193	619	1,073
Howard	--------	--------	63	2.332	9,215	35,195	26	32
Humboldt	23	87	8	262	1,088	6,634	91	64
Ida	10	74	5,412	182,957	1,533	8,300	96	77
Iowa	864	2,816	2	69	17.996	85,335	229	346
Jackson	--------	--------	--------	--------	1,968	6,635	2,782	3,506
Jasper	286	899	5	135	2,338	11,590	2,828	3,260
Jefferson	2	5	2	58	6,120	33,483	299	362
Johnson	314	1,006	25	281	3,337	15,627	159	402
Jones	418	1,276	--------	--------	2,035	9,285	171	212
Keokuk	4	6	6	314	3,751	16,636	598	1,533
Kossuth	6	9	55	1,680	2,171	11,687	73	102

TABLE. NO. 5—CONTINUED

Counties	Sweet Corn		Pop Corn		Timothy Seed		Clover Seed	
	Acres	Tons gathered for canning	Acres	Total bushels	Acres	Total bushels	Acres	Total bushels
Lee	71	177	30	143	7,197	37,265	531	608
Linn	754	2,201	2	102	3,963	17,898	238	418
Louisa	805	1,786	27	295	943	4,577	157	322
Lucas	18	295	25	695	28,477	151,819	566	984
Lyon	23	195	7	228	471	2,204	--------	--------
Madison	169	594	8	191	9,279	48,013	1,121	2,038
Mahaska	12	35	88	1,630	2,979	6,803	2,418	4,237
Marion	1	3	4	100	3,688	15,905	1,674	2,329
Marshall	904	2,688	91	1,667	2,841	14,829	890	1,071
Mills	22	25	--------	--------	536	2,097	31	34
Mitchell	123	544	--------	--------	8,124	37,904	49	93
Monona	499	11,421	545	20,470	350	1,407	73	149
Monroe	10	26	10	45	10,262	52,498	270	482
Montgomery	395	1,378	3	110	1,098	4,937	605	497
Muscatine	6	4	29	1,158	1,428	5,722	16	9
O'Brien	15	33	159	4,771	5,195	28,908	99	182
Osceola	--------	--------	58	1,625	5,732	27,004	6	5
Page	143	476	31	587	1,737	6,853	102	226
Palo Alto	42	337	109	1,504	1,085	5,794	2	6
Plymouth	85	107	124	3,800	924	6,121	123	152
Pocahontas	4	1	131	3,454	1,204	7,057	49	48
Polk	902	2,207	94	3,874	779	4,482	993	855
Pottawattamie	914	2,325	17	376	2,290	6,444	73	70
Poweshiek	461	1,466	11	520	8,495	39,496	469	782
Ringgold	10	22	4	164	23,248	91,910	410	584
Sac	836	3,128	8,408	328,904	1,460	7,793	67	183
Scott	64	188	3	220	723	3,136	126	248
Shelby	172	500	2	45	1,670	6,676	320	292
Sioux	--------	--------	4	101	572	2,500	68	351
Story	257	638	2	65	920	4,309	174	81
Tama	823	2,543	2	43	4,333	23,252	142	347
Taylor	4	--------	3	165	10,362	48,248	202	185
Union	21	--------	4	108	14,915	78,316	592	1,047
Van Buren	75	570	6	72	11,176	53,487	651	853
Wapello	40	39	28	140	6,117	30,427	117	156
Warren	13	12	4	203	9,891	54,952	534	733
Washington	10	--------	22	483	2,061	9,206	525	1,163
Wayne	--------	--------	2	7	43,214	158,733	589	737
Webster	22	232	53	430	1,001	3,795	80	111
Winnebago	1,283	3,458	17	26	1,092	4,691	--------	--------
Winneshiek	1	1	--------	--------	12,728	50,281	616	521
Woodbury	56	395	536	16.828	1,262	5,797	261	414
Worth	81	337	3	109	1,613	6,618	22	13
Wright	4	6	4	312	796	3,935	--------	--------
Total	34,269	106,650	19,265	647,587	514,212	2,332,573	44,237	64,115



COUNT AVON, GRAND CHAMPION
International Live Stock Show, Chicago, 1912

PART IV

PROCEEDINGS

OF THE

Ninth Annual Meeting of the Corn Belt Meat Producers Association

HELD AT

Savery Convention Room, Savery Hotel, Des Moines, Ia., February 18, 19, 1913

TUESDAY, FEBRUARY 18.

The regular time set for the annual meeting of the Corn Belt Meat Producers' Association is the second week in December of each year. Owing to the fact that the legislature met in Des Moines this week, the directors thought it advisable to cause a postponement of the annual meeting until February. Accordingly, a formal meeting was held on the regular date and adjourned until February 18th and 19th.

It was the most largely attended meeting in the history of the association, and the interest was sustained from the beginning to the end, each session being well attended.

The meeting was called to order by President Sykes at 10 a. m., and after prayer by Reverend J. F. Jamieson, of the Elmwood United Presbyterian Church, President Sykes delivered his annual address, as follows:

PRESIDENT'S ANNUAL ADDRESS.

Mr. Chairman and Gentlemen: We again welcome you to the annual meeting of the Corn Belt Meat Producers' Association, and invite you to participate with us in the feast of good things that your worthy secretary will dish up to us through the splendid program he has prepared.

It again becomes my humble duty, as president, to give to the membership an account of our stewardship during the past year, and of the success or failure of the association. So I am glad to be able to report that your association has made a healthy and substantial growth during the year 1912. On account of there being no big rate fights on, the organization has not been as much in the limelight or attracted as great attention as in some preceding years, but it has moved steadily forward, and has secured some very beneficial results for its members during the year.

At the time of the last annual meeting there were pending two very important cases which your association was handling in the interest of the farmers and stockmen of Iowa. One was the proposed advance in rates of 33 1-3 per cent on stocker and feeder cattle and sheep, which was pending before the Interstate Commerce Commission; the other the advance in minimum weights on cars of live stock shipped within the state, pending before the Iowa Railroad Commission. As you will remember, at that time the public hearings before the commission had been concluded, and dates set for the submitting of printed briefs and for oral arguments at Washington, D. C. Accordingly, soon after the annual meeting, Judge Henderson, Commerce Counsel for the state, and your president and secretary, set about preparing the brief, to be submitted by January 2d. Then followed the preparation for the arguments to be made before the entire commission at Washington, on February 10th.

Your board of directors had felt that it was essential to have someone with practical knowledge of the live stock business appear with Judge Henderson before the commission and present that side of the case. Accordingly, they voted that your president should act in this capacity. So Judge Henderson took up the legal phases of the question, and I endeavored to present the case from the standpoint of the feeder in the feeding and transportation of his stuff, and to show how unreasonable was the demand that the railroads were making, and how seriously such a radical change in rates would affect the feeding business in Iowa.

Aside from Judge Henderson and myself, the Live Stock Exchanges of Kansas City, Omaha, Sioux City and South St. Paul were represented before the commission, and made arguments in favor of a continuance of the old rates and customs. On the other hand, the railroads were represented by their ablest counsel, and it made a hayseed's knees shake somewhat to be pitted against such an array of talent. But we got through alive, and the case was submitted; and on March 23d the commission handed down its decision, refusing to allow the railroads to cut out the 75 per cent rate on stockers and feeders. This was a complete victory for the association and the live stock exchanges that assisted in the case.

The winning of this case means a saving to the farmers and feeders of the state of from $200,000 to $300,000 annually in freight rates, and demonstrates the importance of keeping up your association so that you may be ready at any time to jump in and make a fight for your rights.

The minimum live stock car case had progressed about as far as the case just referred to during the fall of 1911, and at the time of our last meeting was waiting for the printed briefs and arguments to be presented to the commission. On account of numerous unavoidable delays the final arguments were not made in the case until May 7th, and the commission did not render its decision until September. It provides that the standard minimum shall be 22,000 pounds on fat cattle, 20,000 on stocker and feeder cattle, 16,000 on hogs, 20,000 on sheep in double-deck cars, and 10,000 on sheep in single-deck cars; these minimums to apply regardless of the size of the car ordered. It is therefore not necessary to order small cars for shipment within the state in order to be protected on the low minimum.

This case has had quite a history, and the rule that was promulgated and kept in force, which protected the farmers from overcharges on light loads of stock by ordering small cars, was the direct result of the work of the officers of this association, who appeared year after year for six years before the railroad commission and fought out the case with the railroad attorneys. But now we have an order from the commission that does away with this necessity and fixes the minimums on the different kinds of live stock as before stated, regardless of the size of the car ordered. This is certainly a great saving to the farmers who ship in one or two loads of feeders at a time, and who ship out light loads of stock to our home markets; and it is safe to say that this decision will save the farmers and shippers of Iowa from $50,000 to $75,000 per annum in excess weights.

Judge Henderson, commerce counsel, prepared the brief and made the argument in the last case, and his work has been highly satisfactory throughout.

I am glad to be able to report to you at this time that the question of the rate on fat sheep, when loaded for interstate shipment in single-deck cars, when double-deck cars had been ordered, has at last been settled, and the rate on such sheep shall be the double-deck rate; provided, however, that the shipper gives the railroad five days' notice when ordering double-deck cars. You should therefore order your double-deck cars five days in advance in order to secure the double-deck rate when single-deck cars are furnished by the railroads. It will be remembered that this matter was taken up at the annual meeting, and a committee was appointed to recommend the length of time that should be given railroads to furnish double-deck cars. This committee reported that in their judgment three days was sufficient time, and this report was at once sent to the Interstate Commerce Commission. But in their deliberations they thought that time too short, and extended it to five days.

During the fall of 1911, the railroads made application to the Railroad Commission for an advance of 12½ per cent in rates on all kinds of live stock shipped within the state. This case was never pushed, and I understand the railroads never requested a hearing on the application, and that just recently they dismissed the case. This was certainly very courteous on their part, as it no doubt relieved the association of a very bitter and prolonged fight to prevent those advances. But I am inclined to the belief that if the farmers had not been organized, and had there been no Corn Belt Meat Producers' Association, those advances would not only have been requested, but they would have been put into effect, and the farmers would have been paying them for some time; for I do not believe the railroads were merely trying to run a bluff when they filed their petition asking for the advance. This again demonstrates the value of your organization.

Now, just a word about the recent movement of the Chicago Live Stock Exchange to advance commission charges for selling live stock. Ever since the closing of the offices of the Co-operative Live Stock Commission Company, we have felt that it would only be a question of time until a demand would be made for advanced commissions; and the very light receipts during the past summer gave the agitators and the fellows who were just hanging by the "skin of their teeth," an excuse to make this demand. I learned during the month of July that such a movement was on foot, and at once wrote the president of the exchange, asking for information concerning it. He replied that a committee had been appointed from the exchange to investigate the matter, hear complaints, and report later. The secretary being away on his vacation, I at once formulated a remonstrance, protesting in the name of the association against any advance in commissions, and asking that a committee of stockmen from this association be granted a hearing before a vote was taken. This remonstrance and request were forwarded to the committee from the exchange, and from correspondence that followed, both Mr. Wallace and myself got the impression that such a meeting would be arranged, and that we would be notified thereof. Acting on this belief, the committee to represent the stockmen were selected and notified to be in readiness to go to Chicago at any time, to take part in the hearing. Time passed, but no word came calling us to Chicago, and we had about concluded that the special committee had reported unfavorably on the advance and decided to drop the matter, for the present, at least, when, to our surprise, one day while the state fair was on, there was delivered to the secretary and myself a bunch of telegrams from commission men who were opposed to the advance, stating that the exchange would vote on the advance the next morning at nine o'clock. This was indeed short notice, and we had to act quickly. So we hurriedly gathered together at the headquarters all the members of the association whom we could find, and passed a resolution denouncing the move as unjust and unfair, because the committee had not consulted the wishes of the stockmen in the matter; and the members began to fire in telegrams to their different commission firms, protesting against the advance. Some twenty-five or thirty messages were sent, and the result was that the advance was voted down by a large majority.

But the agitators and the seekers of spoils were not to be downed in that way; so they continued their quiet work, until one day, without your officers having any knowledge of what was going on, a vote was taken, and the following increases, as I understand it, were made in commissions. On all straight carloads of live stock over the following minimums, an extra charge of 5 cents per hundred is made:

Cattle	23,000 pounds
Hogs	17,000 pounds
Sheep in double-deck cars	22,000 pounds
Sheep in single-deck cars	12,000 pounds

Up to these minmium weights, the commissions remain the same as before.

I have gone into this question quite thoroughly, in order to let the members know the situation, and that the officers did all in their power, with the knowledge they had, to prevent any advance. Had the committee from the exchange acted fairly and kept us informed, instead of putting the thing through on the quiet, as was done, we believe all advances could have been defeated.

SHEEP AND HOGS IN DOUBLE-DECK CARS.

Demand has come from some of our members that the railroad companies should permit them to load both hogs and sheep in the same double-deck car, i. e., one deck with hogs and the other with sheep. At the present time, if we load hogs and sheep in both decks, they permit it without extra charge; but if the shipper keeps them separate and loads a deck of each, he is charged the single-deck rate and the single-deck minimum is enforced on both hogs and sheep. This matter should be taken up by this organization and corrected, for there is no good reason why a shipper should not be allowed to load a deck of hogs and a deck of sheep in the same car without being penalized. This practice would give the companies more weight to haul in one car, and would naturally inure to their benifit.

SERVICE AND ACCOMMODATION ON STOCK TRAINS.

Without doubt, the past year has been one of the worst in regard to service and accommodations for the stockmen that we have experienced for years, and a flood of complaints and protests has been filed by our members from all parts of the state. Had these complaints been confined to the winter months of 1912, when the snow and cold were so severe, we should not have wondered at them; but the facts are that the shippers have complained of the poor service and accommodations during the entire summer and fall. The shippers' reports filed by our members show that the service was slow and the accommodations for the stockmen very bad in many instances. Especially is this true as to overcrowding of way-cars and their unsanitary condition. It is a very common occurrence to crowd from twenty to thirty men into one of these way-cars. This is certainly overcrowding humanity, and it seems to me that from a humanitarian standpoint the railroads should furnish at least decent accommodations for the shippers, so that they might ride with as much ease and comfort as the animals they are shipping.

Also, many complaints come from shippers that their stock has been unloaded at some small town where there is neither feed nor water, and but a few miles from the Union Stock Yards, because the conductor claimed the thirty-six-hour limit had expired. I find that stock is often unloaded within twenty-five to fifty miles of Chicago, and allowed to remain in those little two-by-four yards for from eight to twelve hours, when, at the pleasure of the railroads, they are picked up and taken into the stock yards, arriving too late for the market, and of necessity must be held over until the next day. This is certainly a gross injustice on the part of the railroads, by taking undue advantage of the thirty-six hour law. The intention of the law was to give the railroads ample time to deliver the stock from the farthest point in Iowa inside of the thirty-six-hour limit. We well remember their plea for an extension of the twenty-eight-hour law, in order to enable them to reach the market without the necessity of unloading the stock, which they claimed they could not do under the law as it was then enforced. At that time the stockmen believed that the railroads were acting in good faith, and took them at their word, and consented to the extension of time to thirty-six hours; but since then we have learned that they were only playing for more time to get our stock to market, and that the speed on stock trains has been reduced in proportion to the extension of time, and that the percentage of live stock now unloaded on account of the expiration of the time limit is practically as large as it was under the twenty-eight-hour law. This should not be the case, however, and it does seem to me that any Iowa-Chicago line of railroad ought to be ashamed to confess that it can not deliver a car or cars of live stock from the farthest Iowa point to Chicago inside of thirty-six hours, when they formerly did it almost every day in the week inside of twenty-eight hours.

These questions have been taken up by your officers with the officials of the different railway companies without avail, and practically no headway has been made toward solving these vexatious problems. So I hope this convention will thresh them out and decide what is the proper course for this organization to pursue in dealing with these very important matters, which not only affect the profits on your live stock and reduce your bank accounts, but have to do with your comfort and safety while accompanying your stock to market.

Then there is the question of a five-day-per-week Chicago market, instead of three, which is being agitated again by the commission men of the Chicago Live Stock Exchange. Some time ago a meeting was held in Chicago, at which representatives of the exchange, the packers and the railroads decided to try to further the plan for a five-day-per-week market, and if possible, distribute the receipts more evenly over the five-day period. They are now asking the feeders and shippers to join with them in making this plan a success. This is certainly a commendable undertaking, and one in which our members should most heartily join. I have written a number of reliable commission firms concerning the success of the market on off-days, and the consensus of opinion coming from them is that, quality considered, the stock sells as well on those days as on the regular market days. They say the railroads are also delivering the stock in good time for the market on those days. We all know the evils and disadvantages of flooding the market on Monday and Wednesday, and if we can co-operate to distribute this stock more evenly over five days of the week, and in that way prevent the heavy runs and bad breaks in the market, which mean the loss of thousands of dollars to the live stock interests, it is certainly our duty as well as to our advantage to do it.

Now, there are some things to which I wish to invite the attention of the present general assembly:

PHYSICAL VALUATION OF RAILROADS.

For years there has been some agitation along this line, and some of our best economists and rate experts have advocated a physical valuation of our railways, so that our State Railroad Commission could have some intelligent way of arriving at what is a fair rate for both the carriers and the people. Under our present system there is no scientific way for the commission to arrive at what is a proper rate for the railroads to charge. Other states have taken the lead in this matter, and have passed laws providing for the physical valuation of their public carriers, and they seem to be making good headway in regulating and adjusting their rates. Then why should the great state of Iowa be found so far in the rear in this matter? It seems to me that the present legislature could perform no greater service to the people of the state than to pass a bill providing for such valuation, and I hope this organization will go on record as favoring that legislation.

Then there is the question of revising our present laws affecting taxation. There is a movement on foot at this time to increase the taxes on farm property and reduce them on other classes of property, the claim being made that the farmers are not paying their share of the taxes. In reply to this charge, I will state that in my judgment farm property is paying a larger proportion of the revenues—both county and state—than any other class of property, for the simple reason that farm property can not be covered up from the assessor, while it is a notorious fact that a large percentage of practically all other classes of property is hidden away from the assessor when he makes his call. It doubtless is true that our tax laws need revision, but I wish to go on record as being opposed to any measure that will place a greater burden of taxation upon the agricultural interests, as I verily believe they are paying their share; and I hope this association will take a determined stand against any such measure.

The question that is uppermost in the minds of most farmers today is the prevention and cure of hog cholera by means of virus and serum. As you well know, hog cholera has devastated thousands of herds during the past year. Never in our history have we sustained such a loss. So I feel it is time we were bestirring ourselves to prevent a recurrence of this fearful loss in the future, if possible; and to this end I believe the present legislature should make a liberal appropriation for the establishment of a well-equipped plant for the manufacture of the serum and virus where a sufficient amount can be kept on hand to meet the requirements of the farmers of the state; the manufacture, sale and distribution of the product to be directly under the supervision of the state veterinary surgeon and his assistants, which I believe to be the only department that can properly police and safeguard the handling of this most dangerous product. I hope this convention will speak out freely and let the legislators know what you desire along this line.

Our splendid agricultural college and the extension department are doing a splendid work in teaching scientific agriculture; and through the farmers' institutes and short courses this knowledge is being brought within the reach of thousands of boys and girls who could not otherwise secure it. This work should be commended and encouraged not only by this convention, but by the members of this organization individually, and I would suggest that a suitable resolution be passed by this body.

It again becomes my duty, as I view it, to call your attention to the very grave danger of live cattle and dressed meats being placed upon the free list at the coming special session of congress. Year after year, I have warned you against this danger to the live stock industry, and now, as the time approaches for the calling of an extraordinary session of congress to revise the tariff, because of the demand of the consuming public for cheaper meats, I apprehend that we must bestir ourselves or our fears will become a vivid reality. With land worth $150 to $200 per acre being used to produce and fatten this live stock on, and with high-priced feed and labor, it goes without saying that Iowa farmers can not compete in the markets with free cattle and free meats from Mexico and the South American republics, where land has scarcely any value, and where labor may be had for a mere pittance.

We well know that from time to time representatives of great manufacturing interests have appeared before the congressional committee on ways and means, and declared that if the tariff is reduced on their products, they would be forced to reduce the wages of their employes. And now the farmers and stockmen, who are paying the highest wages of any class of employers of unskilled labor, are threatened with the competition of free cattle and dressed meats from countries where labor costs from one-half to three-fourths less than it does here, and land is worth only about one-hundredth part of what it is in Iowa. And yet if this condition is forced upon us, we can neither reduce the cost of labor nor the price of land and feedstuffs which are necessary to produce the cattle and the dressed meat. So on the narrow margin of profit that the cattle feeders in the corn belt now receive, I can not see anything but disaster and failure and going out of the business if live cattle and dressed meats are placed on the free list; and I believe this organization should be aroused as to this approaching danger and take the defensive position that as long as this nation is committed to a tariff system, either for protection or for revenue only, the farmers and stockmen are entitled under such system to the same measure of benefits and protection as are accorded to the manufacturer of other products. Likewise we should resist in every honorable way and with all our power the passage of any measure that would place live cattle and dressed meats on the free list.

THE COMMERCE COURT.

Year after year, since the Commerce Court was created, I have been calling attention to this needless expenditure of money for the maintenance of this court, for no other purpose, apparently, than to nullify the work of the Interstate Commerce Commission and thwart the will of the people. It seems to me that the recent developments and the scandal that has been heralded over this country through the impeachment and conviction of Judge Archbold, a prominent member of this court, should be sufficient evidence to convince one and all that the Commerce Court is not maintained for the best interests and the protection of the people, and should lead congress to repeal without delay the act creating this court. I hope this organization will again take a decisive stand against this court and demand its dissolution in words of no uncertain sound.

Death has again entered the official family of your association, and during the last summer removed from our midst our esteemed brother and fellow-laborer in the good work, T. A. Thornburg, of Linden, Iowa, director from the seventh district. Tom Thornburg, as he was familiarly known by his friends, was a very exceptional man. Calm, deliberate, self-possessed, always taking time to analyze the situation before acting, he became one of the most valued counsellors of this association. He was also a man of congenial character and sterling integrity, whom to know was to love and admire. He was one of those men who could impart inspiration to a movement merely by his presence, though unconsciously to himself. He attended the first meeting of this association, and took an active part in its formation. He was at once chosen director from the seventh district, which place he filled with credit and distinction continuously until his death. He was also during the entire time an honored member of the executive committee, and one of our most trusted counsellors. But he is gone, and I feel, as I believe you do, that your association has suffered an irreparable loss in his death.

I would recommend that this convention pass a suitable memorial in recognition of his valued services and sterling worth, and that it be published in the coming annual report and a copy be sent to the bereaved wife and family.

Before closing this address, I wish, as president of your association, to publicly thank the board of directors and your worthy secretary for their loyal support and splendid service during the past year. Then I wish to commend that enthusiastic and untiring bunch of men scattered over the state, always ready to push the good work along, and to extend to them our most hearty appreciation of their efforts.

Neither am I forgetful of the splendid recognition that has been given the work of your association by both the daily and weekly press of our state.

To one and all I wish to say, "I thank you." We shall appreciate your help in the future, and I hope and trust that the Corn Belt Meat Producers' Association may always be conducted in such a way as to merit your favor and support.

In conclusion I wish to make some reference to the future of your organization, which I feel depends largely on the interest each individual member takes in its success. As I have repeatedly said, your officers can not make this organization a success without the co-operation of the local members. It is the personal touch of each member upon his neighbor that keeps up the interest and advances your association's standing from year to year. This organization has proven that it can secure splendid results and be of great value to the farmers and feeders, and it is up to the members to see that it is maintained and properly conducted. In my judgment, the great danger to your organization is in the membership concluding that because there is nothing of a spectacular nature being accomplished, which would tend to keep the association in the limelight, there is no further work for it to do, and hence no necessity to continue its existence. To all who might have such a thought in mind, I wish to say that the value of your organization is not measured by what it accomplishes on the surface. No one can tell what unjust measures, rules and practices might be imposed upon the farmers and stockmen if it were not for the fact that your association stands as a watchdog over your interests, preventing many unjust attacks from being made, as well as defeating many that are made. Now, what will happen if you allow this association to go to pieces? Simply this: The questions of rate advances, poor service and accommodations, bad legislation, and all kindred subjects affecting you, will come up and be disposed of without your being represented or having any voice whatever in the matter; and it is to be presumed that they will not be disposed of in such a satisfactory way as if you had representatives taking part and looking after your interests.

As a parting admonition, let me urge upon you, one and all, the maintenance of your organization. It has proven its worth, it has many times over justified its existence, and it will continue so to do in the future if you will encourage and sustain it.

I thank you.

The following paper was then read by George A. Wells, Secretary of the Western Grain Dealers' Association:

THE APPLICATION OF THE MOISTURE TEST IN GRADING CORN.

BY GEORGE A. WELLS.

Secretary of the Western Grain Dealers' Association.

Corn is the most wonderful and resourceful of all grains, because it contains so many different constituent elements that apply to the needs and welfare of humanity.

I understand that, including the by-products of the manufacturers, there are upwards of 200 different products of corn. Thus, containing so many different elements, the general character of corn is naturally complex, and sensitive, and that, as we know by experience, is demonstrated by the manner in which it responds to good breeding and cultivation in the growing by increased yields and improved quality, and as readily succumbs to deterioration and the processes of decay if submitted to improper treatment and care during the curing process or while in store.

Since the time of its first use by civilized people, corn has developed into numerous types and varieties, and its character has been changed more or less at the hands of the growers and professional breeders. In fact, it has been found practical to breed corn with the idea of increasing the comparative quantity of a particular food element, such as protein, fat, starch and sugar, etc., and I believe that, unconsciously perhaps, corn growers and breeders have developed types and varieties of corn that naturally and inherently contain an unreasonable proportion of water, that is one of the dominating elements contained in the grain, and which is of no intrinsic value, but does great harm in effecting a deteriorating and decaying condition if excessive in quantity, that rapidly depreciates its value, oftentimes disastrously, and results in financial loss to the possessor of the corn, whether it be the farmer, the grain merchant, or the transportation company.

It is only a few years since Secretary Wilson, of the United States Department of Agriculture, began to investigate the moisture content of corn and its effect on the keeping qualities of the grain.

The investigations developed the fact that the minimum moisture content of corn is about 12 per cent, the same as contained in the air, and that it may run as high as 30 per cent, and even more.

Some fifteen or eighteen years ago, I had an experience in connection with the purchase of about a million bushels of ear corn that was bought during the fall and stored in well-built, ventilated cribs, and held until the next summer, when it was shipped to market. An accurate record of the weight of this corn as purchased from the farmers was kept, and also the weight on which it was sold, and the result was an actual loss or shrinkage of 16 per cent in the weight of this lot of corn, figured on a shelled corn basis.

It has been demonstrated that the extremely large yields of corn are apt to show the lowest comparative percentage of dry matter content. In other words, the extremely large yield seemed to show a greater increase of the moisture content than of the dry matter content comparatively. And it would seem that there is a tendency on the part of the corn growers to obtain large yields, regardless of quality, and the dry matter content, that in fact constitutes the entire intrinsic value of the corn, as the water certainly has no intrinsic value either for feeding purposes or manufacturing.

I desire also to call your attention to the fact that the agricultural colleges, and the agriculturists, of which in these days there are many, have given their attention almost entirely to the matter of improving the yield of corn, and have absolutely neglected the importance of caring for the corn after it is harvested, with the idea of making it most valuable commercially, and putting it in shape to keep well in transportation and in store.

I also wish to sound a note of warning to the corn growers, that too much water in corn is a dangerous thing. In this particular, I refer to the inherent moisture that is grown into the corn or contained in the grain before it is harvested. The state of South Carolina prohibits the sale of any corn within the state that shows more than 30 per cent of acidity, and such corn may be confiscated under the law of that state. Mr. E. J. Watson, commissioner of agriculture of the state of South Carolina, in his address before the Grain Dealers' National Association, at Norfolk, last October, said:

"There are going to be some startling developments connecting King Corn with the disease of pellagra."

He asserted that this disease is a result of the excess of acidity in corn, and that this excess of acidity is the result of fungus growth that develops in the corn. He says:

"The relation of moisture is simply this—moisture back in the field before the corn is taken out, naturally, essentially is the basic foundation of the fungi."

The point that I am trying to emphasize in this connection is the great necessity of giving more attention to the growing and curing of the corn to avoid the disastrous results that I have mentioned, and also to produce corn that will be more valuable for feeding and manufacturing purposes.

As I have already stated, corn when offered for sale by the farmers, immediately after husking, usually contains from 18 to 30 per cent of water, and it is not until after January 1st that any of it as a rule becomes cured out sufficiently to reduce the moisture content to 16 per cent, which is, in fact, about the minimum percentage of water content of any corn sold by the farmers, unless it may be in the very last days of an old crop, when the corn has passed through the heat of the summer.

The grain trade has always suffered heavy losses in the handling of corn, because of it getting into a heating condition while in transit or in store, because of an excessive moisture content. A few years ago, heavy shipments of corn were made from this state to the southern distributing markets of St. Louis, Memphis, Louisville, most of which arrived in a heating condition. There were no driers in those markets that could be used in the handling of this corn, and nothing could be done except to forward it to New Orleans, where hundreds of carloads were finally dumped into the gulf. The condition of this corn became so bad while standing on the tracks at New Orleans that the health authorities insisted upon disposing of it in this manner.

Since the Department of Agriculture began the investigation of the moisture content of corn, and subsequently the invention of the moisture test by Doctor Duvel, who is now the head of the Bureau of Grain Standardization, it is consequently possible to determine accurately the moisture content of corn, and to avoid possibility of heavy losses in the handling and storing of it, that will be made very plain to you by the demonstration of Doctor Duvel's moisture test by Mr. Brown, who will follow me.

I certainly would not criticise the farmer for selling as much water in his corn as the purchaser will accept, if there is no disposition on the part of the grain buyer to discriminate in the price, and it is my opinion that the grain buyer who does not buy corn on the basis of the moisture test, and does not provide himself with a tester, does an injustice to the farmer who sells corn of light moisture content, and directly encourages the production and sale of corn with heavy moisture content.

The Grain Dealers' National Association, in promulgating uniform grading rules, provides for a consideration of moisture test in grading corn as follows:

No. 2 corn	16 per cent maximum moisture content
No. 3 corn	19 per cent maximum moisture content
No. 4 corn	22 per cent maximum moisture content

Corn grading more than 22 per cent of moisture is considered as no grade.

Most of the corn marketed at this time is grading No. 3 and No. 4, on account of moisture content, that would otherwise grade No. 2 and I would say that about two-thirds of the corn being marketed at this time by the farmers contains more than 19 per cent of water, so that about one wagon load out of every five or six represents the water that is being sold in the corn, and it naturally follows as a result of the application of the moisture test that the market value of corn is based very largely on the moisture content. As, for example, at Chicago, on January 28th, the sales were on the following basis:

17 per cent moisture	47¾ cents per bushel
18 per cent moisture	47½ cents per bushel
19 per cent moisture	47¼ cents per bushel
20 per cent moisture	46¼ cents per bushel
21 per cent moisture	45½ cents per bushel
22 per cent moisture	44¾ cents per bushel
23 per cent moisture	44 cents per bushel
24 per cent moisture	43 cents per bushel
25 per cent moisture	42 cents per bushel

This shows a difference of about 5¾ cents per bushel value as between 17 per cent and 25 per cent moisture content corn.

The Table No. 16, published by the United States Department of Agriculture, that has been handed to you, gives the relative worth of grain on a dry-matter basis, showing the price per unit of measure from 40 cents to $1 per bushel, and the difference in value for each one per cent of moisture from 12 to 25 per cent, and you will note that the Chicago market values that I have given practically reflect the differences applying to each one per cent of moisture as shown by this table.

This close comparison between the actual sales in Chicago and the dry-matter basis shown by the card would not probably hold if there would be an excessive volume of receipts of extremely heavy moisture content corn, as the supply of that particular kind of corn would exceed the demand, and, as frequently occurs, the capacity of the driers might not be sufficient to take care of it, consequently buyers would not feel that they are safe in buying the corn with heavy moisture content and take the risk of storing it or forwarding it in transportation with such heavy moisture content.

I am not informed technically as to the feeding value of corn, but I assume that an excessive amount of moisture in corn does not contribute to meat production.

If as a feeder you should buy 1,000 bushels of 24 per cent moisture content corn, 8 per cent of your money would be expended for excessive water content above the normal moisture content of the 16 per cent; that is, considering that the average moisture content of the best quality of corn would be about 16 per cent.

If the price of corn is 40 cents per bushel, based on the maximum of 16 per cent moisture content, your loss by excess moisture would be $32 on the purchase of the 1,000 bushels.

In other words, you should pay $32 less for 1,000 bushels of 24 per cent moisture content corn than for 1,000 bushels of 16 per cent moisture content corn, at 40 cents per bushel, in order to receive the same feeding value.

In conclusion, I want to urge upon you as growers of corn to give the question of the moisture content in breeding, growing and caring for the corn after it is harvested, your earnest attention, in order that we may not incur further interference in the marketing of this most valuable of grains by drastic pure food regulations with which we are now threatened.

Following Mr. Well's address, Mr. Brown, of Chicago, made a practical demonstration of the use of moisture-testing apparatus.

AFTERNOON SESSION.

President Sykes, presiding.

Professor John A. Evvard, of the Iowa Agricultural College, delivered the following address:

BEEF MAKING IN IOWA.

By John M. Evvard, Animal Husbandry Section, Iowa Experiment Station.

How shall we feed our cattle so as to make the maximum profit? This is the dominant issue in beef making in Iowa. The first essential is that we shall prevent the waste of coarse fodders, efficiently converting them into salable beef. Our corn stalks, fed as silage, should yield a big revenue. We must have legumes in our rotations, preferably alfalfa or clover, although soy beans and cowpeas may do, so as to keep up the nitrogenous fertility. The successful general farm practices include a legume as one of the crops. These rough leguminous hays grown in our fields and fed in our feed lots or as pasture not only will keep up the nitrogenous fertility, but will furnish the organic matter so vitally essential in a productive soil The fertility residue resulting from cattle feeding must ever and anon be one of the profits derived from the feeding operation. The time has not yet come when we can advantageously buy in commercial quantities all of the fertilizing elements, such as nitrogen, phosphorus, etc., needed in the maintenance and conservation of our soils.

We are on the border-edge of a new beef making period. It is now up to us to cut all the costs of production to their minimum. This is to be done largely by refining the operation, growing our own cattle of the best possible beef making breeds, and finishing them out as baby beeves. We will grow alfalfa and clover because they are premier cattle feeds as well as most superior soil restorers. We here in Iowa should bear in mind that our location is ideal for beef production, that we are in the center of a cheap food producing region, and that on all sides of us the best parts of other states touch. We have as cheap corn as any state in the Union, which means cheap silage. We can also grow alfalfa and clover, and, because of their relative cheapness as compared to other states, market such feedstuffs to more advantage through the live stock than by selling them direct from the farm. Beef finishing and growing tend to ultimately settle in those sections of abundant cheap feed. Meat, milk, poultry and egg production,are centering in Iowa because we can thus condense our products for shipment and at less production cost than our neighbors. If any middle west state is going to raise cattle, it is going to be Iowa, largely because transportation facilities, general location and economic advantages favor us.

What is the value of an acre of corn stalks if preserved in the form of silage? Our figures, secured by actual trial, show that when clover hay is worth $10 as a cattle food, corn silage is practically worth two-fifths as much, or $4. Last year, with silage costing $3.20 a ton, the clover hay would have had to have been bought at $7.66 to have been equally as efficient. However, assuming silage to be two-fifths as valuable as clover, which is less than the figures show, we find that ten tons of corn silage was worth, at the rate of $4 per ton, $40. We have the following charges, however, against this ten tons:

Fifty bushels of corn, at 32 cents per bushel........................	$16.00

When corn is worth 40 cents at the elevator, as it now is, the field value will be at least 8 cents less, or 32 cents per bushel. Eight cents covers husking, board of man, feed of the team, maintenance of wagon and hauling to market.

Cost of putting ten tons of silage into the silo, at 70 cents per ton..	7.00
This includes all costs of machinery depreciation, as well as horse and man labor.	
Value of the stalks as they stand in the field......................	1.00
Storage in an Iowa silo, at 23 cents per ton.....................	2.30
Total charge against the ten tons of silage..................	$26.30

Deducting the charges against this acre of silage, or ten tons, we have left for the corn stalks a value of $13.70 an acre, and if clover hay is worth $10 a ton, an acre of corn stalks from fifty bushel corn land is easily worth this $13.70. Does it not pay to gather and put into the silo a part of them?

To determine the comparative value of silage and clover for two-year-old cattle, and furthermore, to discover the best methods of feeding silage, we have carried on quite comprehensive experiments at the Iowa experiment station the past few years. One trial, especially that of 1911-1912, in which five lots of ten steers each were fed, expresses typically the general results of our experience. That corn silage is a most acceptable and efficient fattening steer feed, the following figures clearly show:

CORN SILAGE A PROFITABLE CATTLE FEED.

Two-year-old steers, ten in a lot, November 23, 1911, to April 21, 1912—150 days. Animal Husbandry Section, Iowa Experiment Station. Shelled corn and cottonseed meal, all lots.

	Full-fed, 40 days.			90 days.	
	Clover	Clover and silage	Silage	Silage	Silage
Initial weight	940	943	919	920	922.8
Final weight	1,229.7	1,299	1,261.3	1,246	1,257
Daily gain, average ...	2.398	2.373	2.281	2.169	2.228
Feed eaten, daily average:					
Shelled corn	20.20	16.95	15.60	13.71	14.64
Cottonseed meal	2.28	3.08	3.08	3.08	3.08
Clover hay	9.02	3.90	....	....	....
Corn silage	....	22.35	27.10	30.81	28.62
Cost of a 100 per cent gain, excluding hogs	$12.63	$11.77	$10.65	$10.74	$10.72
Net cost of a 100 per cent gain, deducting hog profits	10.83	9.62	9.10	9.08	8.81
Actual selling price at Ames*	7.69	7.72	7.61	7.60	7.62
Net profit on each steer..	17.27	22.22	22.03	22.45	23.46
Shrink, per cent	2.669	1.617	2.482	2.568	2.307

*Initial home cost equals $4.65. Chicago values are: Lot 1, $8.20; Lot 2, $8.15; Lots 3, 4 and 5, $8.10. Hogs, $6.10 first ninety days, $7.50 last sixty days. Feed prices: Corn, 50, 51, 55, 57 and 65 cents, by months; cottonseed meal, $28; clover, $15; silage, $3.20. Roughage fed according to appetite, twice daily, except Lot 5 limited last two months.

The silage fed cattle, without a single exception, returned greater profit than where clover was fed as the lone roughage. By using silage, the gains were cheapened and the profit per steer increased.

Where both clover and silage were allowed as compared to either clover or silage alone, the steers being put upon a full feed in forty days, the advantages are slightly in favor of the clover-silage combination. Inasmuch as it is fundamentally important that we grow legumes such as clover or alfalfa upon the farm, we are glad indeed, that the figures show that both the clover and silage can be used to advantage when fed in combination. Alfalfa should give slightly better results than clover, because of its higher protein content and better average quality. In the absence of a legume hay, experience has taught us that some oat straw may be utilized to advantage. Steers getting a full feed of silage, however, will consume very little dry roughage, be it a legume or other roughage.

The cost of silage as figured in our 1911-1912 test was $3.20 a ton. We are all interested in silage costs, and how we shall figure them. The above summary of cost shows our method of figuring, basing the silage value as nearly as possible upon its market worth, and using the elevator market price of corn as a basis.

These costs of course allow the grower a profit on his field corn if the market permits. Fertility hauled from the farm in the corn grain and cobs (if these are sold) is not credited. According to the above computation, based upon actual figures, with corn worth 40 cents at the market, we find that silage costs $2.63 a ton. With every cent increase in the price of corn, the silage goes up 5 cents a ton. With corn at 50 cents a bushel, silage is worth $3.13.

How much silage shall we feed, and how shall we distribute it during the feeding period? Our experience clearly shows that steers getting silage should be given a very heavy feed from the very beginning of the fattening period. To induce the consumption of a maximum amount of silage early in the feeding game, the corn can be somewhat limited. We compared different methods of feeding silage, as shown in the table presented, one lot being put on a full feed of grain the first forty days, the other two in ninety days. The first lot was allowed all the corn and silage they would eat, according to appetite, throughout the entire period. They made a little more rapid gain than the other lots, but a smaller profit, namely, $22.03 per steer. Where silage was pushed heavily the first ninety days, and both silage and corn allowed according to appetite the last sixty days, the profits were $22.45. The last lot put on a full feed of grain in ninety days, the corn being heavily pushed and the silage limited, showed a still greater profit, or $23.46; this in spite of the increased cost of corn, which mounted from 50 to 51 cents the first two months to 57 and 65 cents, respectively, the last two months. If the corn had continued at the same average price as during the first three months of the feeding period, or 52 cents, the lots fed heavily on silage and light on corn early in the period, and heavy on corn and light on silage at the finish, would have clearly out-classed the ordinary method of full feeding both silage and corn from the beginning.

The steer will eat too much of the bulky, watery silage at the finish of the fattening period. When on hay, the steer naturally comes down from twenty pounds the first month to four pounds the last month, the grain going up accordingly. In this case, the grain tastes better than the hay. With silage, however, the steer, instead of going back on the silage to the extent of 80 per cent, eats about fifteen to twenty pounds at the finish, as compared to fifty at the beginning, or a decrease of only 60 to 70 per cent; he likes silage too well. As the capacity becomes limited, and the gains more concentrated, thus requiring more dry matter per unit increase, the object should be to keep the feed just a little bit better than the cattle, which merely means that the grain should form a steadily increasing proportion of the ration as the animal puts on the marketable bloom.

The shrinkage on silage-fed cattle is not ordinarily greater than on dry-fed ones. Our shrinkage trials clearly indicate that cattle receiving both silage and dry roughness during the feeding period shrink less than those on either dry feed or silage alone. The clover cattle in the winter of 1911-1912 shrank more than any of the silage lots, or 2.669 per cent, while those getting both clover and silage shrank the least, or 1.617 per cent. The silage lots ranged from 2.307 to 2.568 per cent. In 1910-1911, the average shrink for the three silage-fed lots was less than the clover, while the two lots receiving both silage and clover, shrank respectively, 1.504 and 1.989 per cent, as compared to 2.548 per cent for clover and 2.731 per cent for silage. In shipping silage-fed steers, we make it a point to keep some silage in the ration until the steers are shipped. We maintain the former taste of the ration as nearly as possible, decreasing the supplement somewhat, however, and adding some oats and dry hay, preferably timothy, together with oat straw if available. The corn feed is decreased only sufficient to allow for the consumption of some oats, say one-fourth to one-third of the ration. By following these precautions, our silage-fed cattle have shipped, filled and sold well. In the spring of 1912, not a single steer showed a tendency to laxativeness until the yards were reached.

That a good quality of silage, efficient for beef production, be made, due attention must be paid to maturity, palatability, quality and moisture. The best silage is made at about the fodder cutting stage, when the ears are well dented and the leaves not too dry. It is well to let the grain develop as much as possible without losing too much of the stalk's greenness. I would rather cut corn too mature, and put water on it, than cut it too green. Green corn makes dark, sour silage, while mature corn makes light, uniform-colored silage. Silage, to be palatable, must be sweet and free from mold. The peculiar, pungent, stimulating taste typical of good silage is easily recognized. If the knives are kept sharp, the shucks will be cut finely enough to avoid waste. Dull knives allow the whole shucks to go through; these shucks are particularly prone to collect in chunks and form a starter for mold. By quality of silage, we refer to the percentage of grain as compared to stover, the grain content should be high. It seems as though the higher yielding fields of corn make the better silage, possibly due to the fact that such fodder furnishes more nearly optimum moisture conditions. The moisture should not be over 70 per cent, better still if it is 65 per cent. An animal will consume more dry matter in the form of silage if the moisture is 65 per cent than if it is 70 to 80 per cent; furthermore, too much moisture is undesirable because it tends to produce a sour silage. About 40 per cent of the emphasis should be placed upon maturity, 30 per cent upon palatability, 20 per cent upon quality, and 10 per cent upon moisture.

The striking efficiency of silage for a short feed is surprising. To show you that silage tends to put on very rapid gains early in the period, as well as cheap ones, I place before you some figures:

SILAGE SUPERIOR FOR SHORT FEED.

Two-year-olds of 1,000 pounds, ten in lot, November 22, 1910, to April 21, 1911, 150 days. Animal Husbandry Section, Iowa Experiment Station. Shelled corn and cottonseed meal, both lots.

90 Days.	Silage	Clover
Daily gain, average	2.80	3.11
Cost of 100 pounds*	$7.15	$5.84
120 Days.		
Daily gain, average	2.66	2.68
Cost of 100 pounds*	$7.84	$6.12
Entire Period, 150 Days.		
Daily gain, average	2.61	2.45
Cost of 100 pounds*	$7.91	$7.32

*Hogs excluded. Corn, 36 cents; cottonseed meal, $28; clover, $10; silage, $2.50.

For a ninety-days feed, silage is the best roughage available in the corn belt. It clearly outclasses clover, as is shown by a gain of 3.11 pounds over 2.8 pounds. The cost of a hundred pounds gain is also much cheaper, or $5.84 as compared to $7.15. As the period progressed, the clover seemed to gain an advantage, due largely, however, to the method of feeding. We did not know at that time that it was necessary to limit the silage at the end of the fattening period to secure optimum results. As a result, the silage steers ate more of the canned corn fodder than was best. All of the cattle feeders who passed through the sheds at about ninety days remarked much in this vein: "How much better those silage-fed steers do look! They have more finish, and certainly would outsell the others 25 cents on the hundred." Actual experiment has shown, as compared to clover in a ninety-day feed, that silage cattle rightly fed will sell from 10 to 75 cents higher. The enhanced value of the carcass, coupled with the more rapid and cheaper gains, tells the story of silage short feeding superiority.

Corn silage is not a complete food for fattening cattle, being especially deficient in muscle formers. We have to supply this deficiency by buying protein concentrates, such as cottonseed meal, cold pressed cake, linseed oil meal and others. Alfalfa and clover help somewhat, but are not sufficient. To determine whether or not clover furnishes sufficient protein to balance a ration of shelled corn and silage, we carried on a practical feeding trial in 1910-1911. The advantage of feeding cottonseed meal is depicted in the more rapid and cheaper gains and in the enhanced value of the carcass.

SUPPLEMENT YOUR CORN AND SILAGE—IT PAYS.

Two-year-old steers of 1,000 pounds. 1910-1911 results. Animal Husbandry Section, Iowa Experiment Station.

90 Days Feed.

	Shelled corn, silage and clover	Shelled corn, cottonseed meal, silage and clover
Daily gain, average	2.17	2.73
Daily feed, average—		
Shelled corn	13.86	13.05
Cottonseed meal	....	2.26
Silage	16.18	23.59
Clover	8.49	5.99
Cost of 100 pounds gain	$6.95	$6.39

Increased selling price, due to cottonseed meal, 10 to 25 cents.

In this trial, corn was valued at 36 cents, cottonseed meal at $28, clover at $10, and silage at $2.50. Cottonseed meal was added to the the shelled corn-silage-clover lot during the last sixty days of a 150-day period, but in spite of the comparatively higher finish induced by the meal, these cattle when put upon the market, sold for 20 cents a hundred less than the steers receiving cottonseed meal during the entire five months. These figures are somewhat striking. Ordinarily we expect the gains to be more rapid, and to cost less where cottonseed meal is allowed. In addition, we get the added profit by increasing the total gains and the finish upon the cattle. An enhanced value of 25 cents a hundred pounds is equal to $3.50 on a 1,400-pound steer. One readily sees that he does not have to enhance the value of the finished carcass much to make quite a difference in the results.

Having spent practically five years in Missouri, and three with the experiment station. I can not refrain from giving you some of the recent results secured there by Professor Allison. Where $33 oil meal was added to 40-cent corn, $3.50 silage and $10 clover, to two-year-old steers, for a period of 130 days, the gains were increased over the basal ration from 2.31 to 3.15, the cost decreased from $6.97 to $6.89, the selling price increased from $6.10 to $6.45, and the shrink decreased from 5.9 per cent to 5.4 per cent. What more could we ask of a supplement than this; and yet just 2.7 pounds of this oil meal was fed daily per steer during the entire feeding period. It was further found that $30.25 meal and $25.50 cold pressed cake in the next year, when added to corn, clover and silage, increased the gains from 2.65 to 2.85, increased the selling price 25 to 30 cents, and profit per steer $3 to $5. The judicious and intelligent use of supplement along with corn and corn silage should increase the profits from the silage feeding operations. This is true even though clover or alfalfa are allowed in conjunction with a full feed of silage. The fattening steer will not eat enough of these leguminous hays to balance the ration from a practical dollars and cents standpoint

Which protein concentrate is cheapest and best? That depends on the roughage you are feeding it with, as well as upon the age of the cattle. We have known for a number of years that linseed oil meal was especially adapted to calf feeding, or the making of baby beef, giving results wholly beyond our most sanguine expectations. A comparison of cottonseed and linseed meal was made by the animal husbandry section in the winter of 1909-1910, the calves being fed for a period of 203 days. The basis of the ration was corn and cob meal, in conjunction with some coarse over-ripe clover hay. These surprising results are given for your consideration:

COTTONSEED VS. LINSEED MEAL.

Calves (fourteen at 385 pounds), November 19, 1909, to June 10, 1910—203 days. Animal Husbandry Section, Iowa Experiment Station. Corn and cob meal, supplement, and clover hay.***

	Cottonseed meal	Linseed oil meal
Daily gain, average	2.185	2.305
Daily feed, average—		
Corn and cob meal	13.40	13.70
Supplement	1.84	1.84
Clover hay	2.05	2.04
Feed for 100 pounds gain—		
Corn and cob meal	613	594
Supplement	83	80
Clover hay	94	89
Cost of 100 pounds gain	$5.49* 6.46**	$5.29 8.00
Selling price of "babies"	7.75	8.00
Shrinkage, per cent	3.02	3.63
Dressing, per cent	58.5	60

*Corn and cob meal, 43 cents; cottonseed meal, $30; linseed, $30; hay, $10. **Corn and cob meal, 53 cents; cottonseed, $30; linseed, $30; hay, $12. ***Clover somewhat coarse, cut too ripe. Cottonseed meal, 46.85 per cent protein; oil meal, 40.45 per cent.

That the linseed oil meal calves should out-gain those getting cottonseed meal, require less feed per hundred pounds gain, and make cheaper gains (supplement costing the same), and that they should sell for a higher price, and dress a higher percentage, but shrink more, is not surprising. However, we are somewhat dumbfounded when we learn that the cottonseed meal, in order to have broken even with oil meal at $30 a ton, would had to have been bought at $13.28, or, putting it in another way, that with cottonseed meal costing $30, we could afford to pay $46.44 a ton for the oil meal, and still come out even. When you decrease the cost of gains 20 cents and increase the selling price 25 cents a hundred, it makes a big difference in the profits. This is precisely what oil meal did as compared with the cottonseed meal. That the somewhat coarse clover, cut when over-ripe, is indirectly responsible for the good showing of the oil meal is quite likely.

In making the computation concerning the worth of oil meal, we counted the initial cost of the calves at $7.80, figured corn and cob meal at 43 cents, and the hay at $10. By changing the value of the corn and cob meal to 53 cents, and increasing the hay to $12, we find that we could afford to pay $46.28 for the oil meal, as compared to $30 for the cottonseed meal. The differences in the price of corn and hay mentioned made little difference in the relative efficiency of the oil meal.

That oil meal should run 40.45 per cent protein is somewhat unusual, this being about five pounds higher on the hundred than is usually guaranteed and found. However, the cottonseed meal also runs 46.85 per cent protein, or from five to six pounds higher than common. This makes the relative comparison as reliable as though the normal percentage were found in both, or 35 per cent for the oil meal and 41 per cent for the cottonseed meal.

That the roughage fed should affect the efficiency of oil meal, I have alluded to. In figuring over some of the recent Nebraska experiments, I find that where cold pressed cake is costing $25, the same being fed in conjunction with corn and corn silage, that one could not afford to pay more than $27.66 for linseed meal in order to come out even. This is on calves. A later trial run on the same cattle, the roughage being changed from silage to prairie hay, showed that when cold pressed cake cost $25 that linseed meal is worth every cent of $37.66. Here is an emphatic difference in the efficiency of the supplement caused indirectly by the roughage.

That linseed was especially efficient when fed with timothy hay, I have often noticed. Cottonseed meal fed with timothy tends to aggravate the constipating tendency of the ration, while the laxativeness of the linseed has the opposite effect. Where linseed is fed with corn silage, the laxative principle is not especially needed, hence we find that the relative efficiency of linseed in this case is not marked.

As the cattle become older, linseed becomes relatively less efficient as compared to cottonseed. Professor Allison, of Missouri, in 1911, fed some long two-year-olds, comparing cottonseed and oil meal. Counting the two supplements at the same price, the relative profits of the cottonseed per steer were twice as large as the oil meal. The gains were also more rapid with the cottonseed, or 2.87, as compared to 2.6. Silage was used as a roughness in this experiment.

The relative efficiency of oil meal and cottonseed meal, therefore, is not easy to express in figures. However, when silage is being used, oil meal is probably worth for calves about $35 a ton, when cottonseed costs $30; for yearlings $32 or $33, while with two-year-olds or older it is a toss-up. Now when prairie or timothy hay, corn fodder, corn stover, millet, or other neutral or constipating roughage is used, oil meal for calves, with cottonseed meal at $30, should be worth $37 to $39; with yearlings, $34 to $35, and with two-year-olds or older $31 to $32.

How about cottonseed meal versus cold pressed cake? We compared these two supplements with the following results:

COTTONSEED MEAL VS. COLD PRESSED CAKE.

Yearlings (seven at 700 pounds), December 18, 1908, to June 4, 1909—168 days. Animal Husbandry Section, Iowa Experiment Station. Corn and cob meal, supplement, and mixed hay.

	Cottonseed meal (peanut size)	Cold pressed cake
Daily gain, average	1.81	1.85
Daily feed, average—		
Corn and cob meal	14.82	14.43
Supplement	3.14	4.35
Mixed hay	5.39	5.29
Feed for 100 pounds gain—		
Corn and cob meal	819	779
Supplement	174	235
Mixed hay	298	286
Cost of 100 pounds gain	$ 9.12* 10.59**	$ 9.14 10.53
Selling price of cattle	6.50	6.50

*Corn and cob meal, 43 cents; cottonseed meal, $30; cold pressed cake, $25; hay, $10. **Corn and cob meal, 53 cents; cottonseed meal, $30; cold pressed cake, $25; hay, $12. Cottonseed meal, 42.867 protein; cold cake, 28.09 per cent.

With the yearlings, mixed hay being used, the two supplements gave practically equal gains, equal costs, and equal selling prices. The cold pressed cake, however, was figured at $25 and the cottonseed meal at $30. It is interesting to note that the staple average price difference between these two feeds as determined directly by supply and demand (or indirectly by the common sense of the feeder), is approximately $5.

At the Missouri station, Professor Allison compared cold pressed cake and cottonseed meal. He fed them, however, in equal quantities, which is somewhat objectionable from a practical standpoint. The results probably would have been different had he based his allowance on equal money values or on equal protein content. As it was, however, he found that the gains of the cattle were practically the same, but the cold pressed cattle sold for 5 cents higher. The profits were practically the same with $30 meal and $16 cake. One serious disadvantage of the cake, as shown by the figures, is that it seemed to inhibit silage consumption to the extent of four or five pounds per head daily, which, on the two-year-old steer is quite an item in the production of cheap gains.

The preparation of the corn fed is likewise dependent somewhat upon the roughage. With dry hays, it has been our custom to recommend that broken ear corn be fed up until the time that the steer begins shelling the corn himself, when a portion of the corn, as gauged by the steer's appetite, should be given shelled. It seems that it does not pay to grind unless one has no hogs to follow. Toward the end of the feeding period, the addition of the cob to the ration is preferably undesirable, and it may be that our observations showing the superiority of shelled corn at this time may be interpreted on the cob theory, namely, that it should not occupy important space in the paunch during the finishing process, when grain would do so much better.

Corn and cob meal has never appealed to me very strongly unless it were in the "getting-on-feed process." Experiments run by the Illinois station showed that the broken ear corn, when fed in conjunction with dry clover, was superior to corn and cob meal. Professor Coffey, of the same station, working with lambs, has also shown that the ear corn was much more efficient than the corn and cob meal.

Our experience with lambs this winter has shown clearly that where alfalfa is used, the grain and alfalfa being kept the same in all the lots, that the broken ear corn is the most efficient, shelled corn second, and ground corn clearly the least desirable method of preparation. On the same amount of corn and alfalfa, the broken ear corn lambs lead, shelled second, and ground last, in actual gains made. On silage, ground corn and broken ear are practically tied in the amount of gains, with shelled corn last.

That shelled corn is more desirable for cattle receiving silage is somewhat indicated by the Illinois station results of last year. However, the results are not conclusive. We have found at this station that shelled corn is very efficient, and our judgment is that it is better than the broken ear when fed in conjunction with silage. We do not believe it pays to grind because of the added expense incurred.

The age at which we should market our cattle is dependent, of course, upon whether we grow them or buy them. If we grow our own beef from well-bred dams and sires of the typical beef breeds—Angus, Shorthorn, Hereford and Galloway—we can not afford to keep the calves through the yearling and two-year-old stage. We must get rid of them as quickly as possible, marketing them as baby beef at the handy weights of 1,100 to 1,200 pounds, and while they are still yearlings.

That the "pushing from birth" and "early marketing" pays is clearly shown by some practical farm figures presented.

MAKE BABY BEEF OR WELL-BRED, HOME-GROWN CATTLE.

Actual Farm Figures*, computed by Animal Husbandry Section, Iowa Experiment Station. Herefords of identical breeding; calves and yearlings fed, beginning January 1st.

	Two-year-olds	Baby beef
Number of cattle	20	23
Number of days	336	259
Initial weight	475	775
Final weight	1140	1144
Daily gain, average	1.979	1.425
Daily feed, average—		
Shelled corn	12.72	13.63
Cotton or linseed meal	1.94	2.07
Bran	.39	.27
Oats	.56	
Corn stover	1.43	2.21
Corn silage	2.25	3.27
Alfalfa hay	2.00	2.27
Pasture ***		
Cost of feed for 100 pounds gain	$10.79	$15.65
Initial cost per 100 pounds (home)	6.00	5.70
Selling price per 100 pounds (home)	10.55**	10.48**
Net profit per head	20.03	14.04

*Walnut Ridge Stock Farm, Monona County, Iowa. **Baby beeves, fifteen at $11.10, five at $10.15, Chicago; two-year-olds, eight at $10, fifteen at $11.40, Sioux City. ***Baby beeves on pasture May 27th to October 16th (142 days); two-year-olds on pasture May 21st to August 19th (90 days).

Feed Costs—Corn, 65 cents; cottonseed meal, $30.50; oil meal, $38; bran, $28; oats, 26 cents; hay, $10; stover, $3; silage, $4; pasture, 60 cents a month for babies, 70 cents for yearlings. Chicago market about 5 to 15 cents higher on December 2d than on September 16th.

When we consider that the actual value of the calves at the start was $6, and of the yearlings $5.70 a hundred, we can readily see that there was not much profit in carrying calves over the second year. Furthermore, when it came to finishing out these cattle, the babies made the most rapid and economical gains, and furthermore sold on practically an identical market for the same money as the two-year-olds. The net profits of the operation showed $6 a head in favor of the babies, or $20.03 as compared to $14.04. These figures are quite accurate, and show the futility of keeping well-bred home-grown cattle until they are two-year-olds before they are fattened on the average tillable corn belt farm.

Silage deserves the emphasis in this address. It is altogether fitting and proper in closing to quote some of the many advantages of conserving part of the corn crop as silage. They may be enumerated as follows:

A sure crop of roughage.

Large yield per acre at a comparatively small cost per ton.

Increases the stock carrying capacity of the farm.

The nutrients of corn conserved in efficient form.

No waste in feeding, and but little in keeping. The spoiled layer of silage on top can be thrown to the hogs, and they will gather the corn from it. Better still, husk out the fodder and run stover only on top of the silo, thus you will waste no corn grain; stover is cheap.

Succulent, furnishing pasture conditions in the winter time.

Palatable, relished by all domestic animals.

Convenient to feed. No long hauls on wet land; no muddied and puddled fields; no snow up the coat sleeves, as in the fodder way.

Conserves fertility, indirectly, by removing the temptation of selling corn from the farm.

May supplement drouth-stricken pastures.

Stores and keeps well, much better than clover hay, which inclines to become dusty.

Economically stored.

Help to destroy weeds.

Puts finish and bloom on stock such as few other feeds do.

Silage-fed cattle ship well if handled rightly.

May save immature corn.

Jerome Smith, Corning: Does all this profit come about by the use of the Iowa silo, and does that mean one built in Iowa?

Professor Evvard: We refer to the Iowa silo because it really is a farm silo—the hollow block silo, made out of the clay products of the soil. This silo has been pushed by the engineering department at Ames, and has been found very successful. Although we have been buffeted around by the wooden silo and other silo men, the Iowa silo is good; it will keep silage as well as any other silo, and it is as cheap. I am not sure that you can store silage for 23 cents a ton in all the other silos, and I know you can in the Iowa silo.

A Member: My brother has a hollow block silo, and the silage has spoiled for eight inches all the way around. What is the trouble?

Professor Evvard: The silage probably was not tamped well around the edges. It is important in putting up silage to keep a man going around at the very edge and keep it tamped down solidly. It may be that that could be remedied somewhat by putting a thin coat of cement on the inside of the silo. I would advise you to write to Professor Davidson, of the engineering department.

A Member: There were two men working in this silo continually, and on the second filling they ran the hose up into the silo and wet it down thoroughly and tramped it down; and nevertheless that second filling never paid for putting it in, and eight inches spoiled all the way around.

Professor Evvard: If the men tramped around right at the edge, there must be some other factors working. There are many men here who have used hollow block silos; perhaps they could give you some information.

James E. Downing: I would like to ask what is the experience as regards the fill at the market of silage-fed cattle as compared with straight corn-fed?

Professor Evvard: Some record the experience that silage-fed cattle drink more when they get to market. Some of ours did and some did not. I know that they shrink very little going to market. Some of them went clear to Chicago without a bit of laxativeness.

The President: The next subject on the program is "Some Profitable Ways to Produce Beef," by Mr. Rex Beresford, beef cattle expert of the Beef Producers' Association.

PROFITABLE BEEF PRODUCTION.

Mr. Beresford: Mr. President and Gentlemen—I see that on the program for tomorrow you have Mr. McCroskey, president of the Kansas City Live Stock Exchange, and he is going to talk to you about the prospective feeder cattle supply. Under these circumstances, I hesitate a good deal about trying to say anything about the prospective feeder cattle supply for the Iowa cattle feeder, although personally I have some pretty strong convictions on that subject. In fact, when I started out laboring under this high-sounding, euphonious title that Mr. Sykes announced a while ago, "beef cattle expert for the Iowa Beef Producers' Association," the first thing that happened to me every time I stepped on the cattle feeder's farm was to have these questions fired at me: "Where are we going to get our feeders?" or "How much are we going to have to pay for feeders this next fall," or "How are we going to get cheaper feeders?" or some other phase of this feeder cattle problem. They were fired at me so often that I thought I had better try to get wise, if possible, as to the feeder cattle prospects for Iowa and for the United States. So I got busy and got together all the statistics as to the beef cattle supply in the various feeder cattle producing states that I could get hold of. Of course, I took Uncle Sam's figures in general; then the census figures; then I wrote to the secretaries of the various boards of agriculture in the states that have been producing beef cattle; and I tried to digest all these figures and come to some conclusion. The more figures I got together, the more discouraging the outlook seemed; because when we began to look back on the situation, say about twelve years ago, we had, according to the census figures in 1900, a little better than 50,000,000 head of beef cattle in the United States, a pretty good percentage of which was breeding stock. In

1912 we had about 37,000,000 head, or a little better. Secretary Wilson's latest announcement is about 36,200,000 head, and personally I believe that he is just a little bit high in his estimate. But from the figures that I could gather from the secretaries of the boards of agriculture, the cattlemen, the secretaries of the beef producers' associations, and all the organizations that I could reach during this last year, I have come to the conclusion that there are just about forty per cent of the breeding beef cattle in the west, the northwest and the southwest, that there were eight, ten and twelve years ago. I don't claim that these figures are absolutely right or authentic, but from the figures I can get together from these sources, that is just about the situation. The fact that so much land has been placed under irrigation, so much dry farming propaganda distributed, and so much of the range country cut up into small farms and homesteaded, has spoiled the cattle range. Also, the sheepman has come in, and that has helped spoil the feeder supply out there, because where the sheep graze the cow has pretty slim picking.

All these facts together set me to thinking that perhaps we were not going to be able to get enough feeders. Those of you who have tried to buy feeders any time within the last year have had that brought home pretty plainly, because you have not been able to get the feeders you wanted at prices you would like to pay. Sometimes they make a man's hat rise straight up, if he has any hair underneath it, when they price these feeders that you would like to take home. So I tried to see if in the state of Iowa there was any way of getting around this feeder cattle proposition; whether we could raise beef cattle here; whether anybody had done it; whether there was any prospect of profit in it. As soon as I began to ask men about this, the average man in the cattle feeding business would tell me right away: "You can't keep a cow on $150 or $200 Iowa land for her calf and make any money at it; you have got to milk the cow if you keep her in Iowa." But I hated to take that sort of an answer all the way around, and so I began to hunt around for men who had been doing something of that sort, and I visited, all told, during this last year, ninety-seven men who have been keeping cows and growing what we call baby beef here in Iowa.

You have seen from the chart that Professor Evvard showed you a short time ago that there is some saving in the baby beef proposition over the two-year-olds when you have the cattle all grown here. The yearling feeds out better. Of the ninety-seven men that I found who had been growing baby beef in Iowa, I could get figures from just twenty-four. The rest could not tell me that they made some money; a couple said they hadn't made any. Only two were visited who had lost money during a period of from three to twelve years, and even those two thought they had made a little this last year. But from the twenty-four men referred to I got pretty fairly accurate figures on the total cost of producing those calves. During the last year these men had produced 816 calves. They had brought them along as calves following the cows to pasture, had fed them from weaning time on, and sold them some time between the last of April and the first of September. They averaged about 832 pounds per head, and they sold at an average price of $8.60 a hundred. That meant that they brought $69 a head. We figured up the amount of feed that it had taken to produce those calves, and instead of taking each man's farm prices, we standardized the price, putting an average of 60 cents a bushel on corn, corn silage as high as $4 a ton; clover hay as high as $15 a ton; and we charged the old cow and her calf $1.50 a month for pasture during the pasture season. For these 816 calves it cost, counting the cost of keeping not only the cow that produced the calf, but the extra cows necessary to produce just about an average of 85 per cent of calves, the cost of service, of feeding the calf up to the time of sale, and everything else, it cost about $62 a head under 1911 and 1912 conditions, growing them up to 832 pounds in weight. That means that there was $7 a head profit on those calves.

That looked to me like a pretty fair solution—for some men at least—of this feeder cattle proposition. That is not handed out as a cure-all for everybody, or with the thought that all the cattle feeders ought not to buy feeders any more, but go into the production of baby beef; but it shows that some men are producing beef on Iowa land that ranges as high as $225 an acre down to as low as $95, and some of it even as low as $85 or $90 an acre, sweeping from the northwestern part of the state clear down to the southeastern. These figures came from close to eighty counties, so that they are fairly representative of the state of Iowa.

The man who made the most money on his calves was the one who had the best grade of breeding stock to start with. It does not take long to see that you can't make baby beef out of dairy stock or a very poor grade of scrub stock. Your cow must be a pretty fair grade of breeding cow, with some beef blood in her. She does not need to be what you call a high-class beef cow, but she must have some beef type. The strongest emphasis needs to be laid on the character of the sire of these calves from which we are going to try to make baby beef. You can't make baby beef out of the calves that come from what is commonly known as a glue bull—one that dresses out into more hoofs, horns and bones than he does beef; the calves don't begin to mature early enough; they won't fatten out, and there is no use in monkeying with them. The sort of sire the man had who made the best success out of the baby beef proposition was a bull of low-set, close-to-the-ground type, wide and thick-fleshed, heavy in the hind quarters, thick, heavy and smooth in the loin, and wide in the ribs and back. I have seen a good many of the sires that have been getting baby beef calves during the last year, and the men who are making the best at this business don't always buy a bull with just the proper turn of horn for a prize winner in that particular breed, or the proper markings, or anything of that kind; but they go out after the sire that is strong where you want your calf to be strong. You can't get the baby beef calf from any other source except a sire that would have made a good baby beef himself.

Another thing is the care of the pastures. The men who made the best success out of the baby beef business took the best care of their blue grass pastures, who had the most stock on the fewest acres of pasture, who got the most food off every acre; and most of these men who were doing good work in that line were hauling some manure on these pastures. They were men who cut the ragweed before it went to seed, and some of them had paid a little attention to disking the seed-bound places and putting in a little grass seed on the places where it had been killed out.

Another thing was the silo. Professor Evvard has talked silage to you a good while, and I would like to talk it some more, because the silo is one of the indispensable things when you are trying to make baby beef. When you can feed the old cow through the winter on from 35 to 40 pounds of silage and 6 or 7 pounds of hay, and have her come out in better shape in the spring than she went in in the fall, you can afford to keep her for the calf she will raise. If you try to feed her out on $15 clover hay, supplemented with high-priced corn, you can't afford to keep her for the calf she will raise. But when you make use of these cheaper feeds in the winter-time, you can do it at present prices, or even at a little bit lower prices than we have right now.

In addition to the points mentioned, the making use of rough feed in other ways than through the silo, and the furnishing of proper shelter comes in. Good care of the cattle themselves helps out a whole lot in lowering this cost of beef production. A man who goes into the baby beef business with the expectation of not paying any attention to the calves is likely to have a pretty low per cent of live calves to his credit when he gets his calves finally out on pasture and sucking the cow for the summer. If he is going to make a success of the business, he must know something about the cattle business, and follow that pretty closely while he is in it. He can't be in a good many other jobs at the same time and depend altogether on the hired man. The boys will do better than the hired man, usually, especially if they own a share in those calves.

There is another way of producing beef here in Iowa that brings even a little more profit than the straight baby beef proposition. This is a convention of the meat producers of the state, and it is not safe, I suppose, to say much about dairying! I reckon, too, it is not safe to talk about that dual purpose cow; in fact, I have never said anything about that dual purpose cow before any audience but what I have been stepped on before I got outside the door! But it is a good deal this way about the dual purpose cow for the Iowa farm. As one of the boys up at Ames put it one time when I was debating the question of whether or not there was a dual purpose cow: "The theory of the dual purpose cow has been dead for twenty years or more; but as a living fact, the old cow is on hundreds of Iowa farms today." And she is. I did not know there were so many of them until I began to hunt around for this beef-producing proposition in Iowa. I have struck a great many farmers who are keeping the old red cow that milks pretty well and is still able to produce a calf that will feed out into a decent sort of steer; and I have met a good many who are making money on just that proposition. They made it this last year, and are expecting to do it again this year, and for a good many years to come. And while I don't want to pose as a prophet (you know what the Bible says about the old prophets being dead and the young prophets fools), I will be fooled just the same unless there is a good deal more beef production in that way carried on in Iowa for a good many years to come. They are doing it in England; they are still making beef and milk together from some of those old Short-horn cows. In Iowa it seems to go by localities. I found towns where I would hear of half a dozen men hauling cream to the station or selling milk to the creamery, and yet feeding some steers. If you run out into that neighborhood you will usually find that it is four or five farmers together who are milking the old cow and growing the calf—sometimes on skim-milk, sometimes two calves to the cow, sometimes they were mixing things up in such shape that it would take a Philadelphia lawyer to decide just how they were doing the thing. They grow them on the skim-milk and the feed that they get during the first year, and then they begin to feed them and get them on the market at the age of two years or twenty-six months. The cost of making the finished beef out of that calf is to be taxed against the calf, but the old cow has paid the calf's board up to the end of the first year. It takes a man who is a skillful feeder to handle calves in that way and make them come out well. You can't make a very good steer out of a skim-milk calf—that is, our average idea of one; but calves can be grown on skim-milk with the proper supplemental feed of oil meal and oats and oil meal and alfalfa hay and silage, and come out right good calves.

Those are the two main methods of profitable beef production that I have found here in Iowa. There have been some mixtures of the two. Some men have tried to combine a little bit and milk the cow until she begins to slack up; then turn the calf in and let it have the milk the rest of the summer. The good part of the whole thing is that these men are making money at it.

I have been accused by some men who have heard me talk about beef production in this way of advising everybody in the state of Iowa who is not in the dairy business, or who couldn't get plenty of feeders right away at a cheap price, to go to producing beef in one of these ways, but I don't want to be taken as advising anything of that kind, because to produce baby beef profitably a man has to know how to grow calves. He has to pay some attention to his business, just the same as the man who is producing any other sort of live stock profitably; just the same as the man who is feeding steers profitably has to go at it with some intelligence, and a whole lot more brains than the average man shows who doesn't keep any sort of live stock; because if he showed the very highest grade of intelligence, he would be likely to keep some live stock on his farm to keep up its fertility. Not every farmer is fitted for that sort of business, or has his labor or market conditions so that he can handle every sort of beef production; but there are a good many men in Iowa who are selling corn this year for from 33 to 40 cents a bushel who will come to the point where they will keep some cattle on those farms, when they can't get feeders, because they are beginning to find that this fertility proposition is worth looking into. We had Professor F. G. King, of the Indiana experiment station, on our beef cattle special last December, and he startled some of us when he told us that Indiana's fertilizer bill for the last year amounted to a little more than the total receipts from the sales of their surplus live stock from that state. The Illinois fertilizer bill has doubled three times in the last six years, and they are already beginning to ship some commercial fertilizers into Iowa to help out the fields on the farms of the men who have not been keeping live stock. A lot of these fellows are going to producing beef rather than go into the dairy business, to get manure to put on these fields that are growing thin and running out.

I don't believe that under the circumstances there is likely to be any over-production of beef here very soon, so that we will knock the bottom out of the market, considering the fact that there are so few beef cattle in the western states—and in any other part of the United States, for that matter. We are short on beef cattle all the way around.

I am sure my time is up, and I want to thank you for the hearing that has been given me.

The President: Doctor J. I. Gibson, state veterinarian, is going to give us a lecture on the prevention of hog cholera, and how to handle it in Iowa.

PREVENTION AND CONTROL OF HOG CHOLERA.

Mr. President and Gentlemen of the Corn Belt Meat Producers' Association: Mr. Wallace, your secretary, is to blame for getting me in this position. At this time of year we are so busy that we haven't much time to give to extras, and I have not been able to reduce a paper to writing. I will try to give you a little talk along the line of control of hog cholera and other diseases, which may be of some benefit.

In order to successfully combat any contagious or transmissible disease, you must have a system. You must know the nature of the virus or germ of that disease, and by what means it is transmitted from one animal to another. Now, we must first admit that we don't know what the germ of hog cholera is; nobody has found it yet. We further realize that it is one of the most minute germs, in that there is no filter paper fine enough to prevent its passage in fluid through the paper. Apparently, no microscope is able to reveal the germ. It is called the filterable germ; that is all we know about it; and that name was given it because we found out that the finest filter paper will not stop the flow of the hog cholera germ. You know what a filter is in the drug store: a funnel-shape with a paper similar to blotting paper—some fine and some coarse.

Now, there is no use of my spending any time telling you about hog cholera; you all know what it looks like, to your sorrow. You have all read in the papers that last fall Professor Kennedy made a systematic inquiry, covering the entire state, as to the existence of hog cholera and the number of hogs that died in the various counties. He got reports the latter part of November from eighty-five counties that had had cholera in them. He also asked some of the best men in those counties to gather the best information possible as to the loss and let him have it. We all pay some attention to our crop reports and our weather reports and statistics of that kind, and he undertook to gather this knowledge as carefully as such statistics are gathered. A great number of counties reported 400,000 loss, a number 300,000, and so on down the line. Then he made his figures, based upon an ordinary crop of hogs in the state, and came to the conclusion that we were losing at least a million dollars' worth, not less than $12 per head

While I was speaking about the filterable germ, I should have said that we base our theory that it is a germ disease upon the fact that it is transmissible by inoculation from one hog to another. We have some of the most deadly epidemics imaginable that are absolutely harmless so far as any other animal is concerned, unless they get in touch with the same cause. For instance, the horse plague which affected the southwest country last fall could not be transmitted from one horse to another by blood serum or serum from the cranial cavity. Cholera is easily transmissible, and surely transmissible in every case, unless you undertake to transmit to either a natural or acquired immune.

Now, we believe hog cholera may be prevented, and some things have been done toward laying the foundation for its control. There is an association called the United States Association of Live Stock Sanitary Boards, which meets every year in Chicago, about the time of the International show. The membership is made up of state veterinarians, members of live stock sanitary boards, and men in control of diseases in the various states, and some of those engaged in laboratory work. Last December they adopted a set of resolutions that I will give you the gist of, so you will know what they are aiming at. One is that all stock cars at the end of a shipment of live stock be cleaned and disinfected. You have all seen the stock cars go up and down the roads all the season, with from one to two feet of manure in them, reeking with cholera and tuberculosis, and nobody knows how many other germs. Manure is one of the best mediums for the virus of these diseases to live in. At every crossroads that stuff is being rooted and kicked out of the cars all over this country. One ruling that the Live Stock Sanitary Association made relative to that was that these cars should not be disinfected simply by steam and whitewash, but be cleaned and disinfected. Wouldn't you gentlemen rather have a car come to you to load your cattle or hogs in, that was clean and properly sanded, than to have it reeking with filthy manure that had been there all season? You know what it is to ride by a trainload of empties in the summer-time, coming back for your stock; you often have to put the windows down, especially if you stop at a station alongside of those cars.

Another means of spreading of disease is the shipping of breeding hogs from state to state. The Live Stock Sanitary Association passed a resolution favoring the treatment of all hogs shipped from one state to another, except for immediate slaughter, but they didn't specify which treatment. You have heard that there are two lines of treatment to be followed, but, contemplating probably that it would be the serum only treatment, they specify that it should be given not more than thirty days prior to shipment. I happened to be on that committee, and after I thought the matter over, I concluded that we should have specified in that resolution that if it was serum only treatment, not more than thirty days prior to shipment; and if the serum simultaneous treatment, not less than thirty, or probably not less than sixty days; because the simultaneously treated hog may carry cholera.

I presume a number of you gentlemen here have attended the state fair year after year, and probably, being ambitious to have a good crop of hogs the following year, have bought a good boar. You got him home; pretty soon he showed up sick, and died shortly; the hogs at home began to get sick, and they died. The fact was, you got a case of cholera from the state fair or the Sioux City fair or some other fair. That was a sort of package on the side in addition to what you paid for a nice boar. You know you always pay a good price when you buy one at the fair; you can buy them cheaper at the farm. Years ago we instituted an inspection of hogs at the state fair. We were the first state to start it. Some thought it was sanitation on paper or just for the looks of it, or the sound of it; they thought we would not know whether there were any sick hogs at the fair or not. But we soon found out that every exhibitor at the fair was a detective so far as his neighbors in the other pens were concerned, and not a hog could miss a meal or cough sixteen times in succession but what I knew it inside of an hour. We have occasionally had cholera at the fair and been able to keep it from spreading. Last year thirty-two hogs were shipped by one man to the Iowa state fair, and after they were there two or three days we saw the first symptoms of cholera. Two sows farrowed, with fifteen little fellows. We had Doctor Knowles sent here by special request to the Department of Agriculture to administer serum to all the hogs at the fair, if the exhibitors wished it. We gave this man's hogs the serum treatment down to the little fellows two days old, sent him home immediately, and used disinfectants very freely. We afterwards heard from him that Doctor Knowles picked out three hogs and said they would die sure, and there were three or four others that he would not promise to live; and, sure enough, he lost seven out of the thirty-two hogs at the fair. He took occasion to say that not one of the little fellows born there died, and that they and their mothers were doing well.

So the Live Stock Sanitary Association passed another resolution, favoring the treatment of all hogs exhibited at state, district or county fairs. Following that up, we have rulings now by our Animal Health Commission ready to present to the executive council, to put those things in force regarding all our fairs in Iowa, and regarding the shipment of breeding hogs, or even feeding hogs, into Iowa, unless they be treated. All this will be a part of the machinery if we are going to try to control hog cholera.

When we come down to the question of controlling it at home on the farm, I am glad to say that there are a good many hog raisers in Iowa who have this machinery at work so far as they are individually concerned. I know hog men that don't ask the privilege of going to any neighbor's hog lot, and very kindly request their neighbors not to go to theirs when they come to see them on Sunday afternoon. Then there are other ways of spreading the disease. We have the common carriers, the crows and the pigeons and the dogs—and the hog buyer. He is one of the most prolific sources of the spread of cholera. He works just in front of the outbreak—that is, so far as the hogs appear to be in bad condition he is ahead of it; but probably the infection is right there; so he will have to be quarantined too, along with the rest of them.

Let me say to you that there is a normal cholera season; it corresponds to the normal typhoid season, beginning in midsummer and running through the fall and on into the winter. In a normal year we might not hear of an outbreak of cholera in April, May or June in the state, but we would look for them in July. Suppose we get notice that Jones, in the center of a certain township in a certain county, has hog cholera. We go there and apply the quarantine to Mr. Jones and to all connected with him, forbidding them to go to any neighbor's hog lots, and forbidding any neighbor to come to Mr. Jones' hog lots. We find a number of the hogs already sick with cholera, and when they are already sick they are gone, except for the few that may have constitutional stability enough to go through, or may have some degree of natural or acquired immunity to help them through. We take the temperature of the hogs, as fever is one of the first symptoms in hog cholera. Perhaps some have already died, and we inquire what disposition was made of the carcasses. Those that are sick and we think there is no hope for, we would ask Mr. Jones to kill right away, pile them up and burn them, and with them burn all the bedding about the lots and pens; and if the hog lots are good, you can rake and sweep them and burn the rakings and sweepings. Then use the disinfectant, and use the serum on those hogs that you think there is a show to save. If we get there early we might save ninety per cent, in place of losing ninety per cent. As an additional safeguard, you could go all around Mr. Jones' lot for a mile or two, but you would want to disinfect yourself before you went —your shoes and all your clothing. We have veterinarians now using serum in Iowa so carefully that when they are using the simultaneous method they strip off their jumper suit, and their old rubbers, if they have rubbers on, and the towels (they buy five-cent towels by the wholesale), and in the presence of the farmer they do the work, for they burn the whole thing, and disinfect every place where possibly they might have dropped any of that virus. That is the proper way to do. We have other veterinarians traveling over the state with knee boots on that are smeared with cholera blood to the top of them, and they never stop long enough to disinfect the boots. That is not doing it right.

The Dominion of Canada would kill all of Mr. Jones' hogs and pay him for them. Then they disinfect the premises, and say they are so successful that they haven't thought it necessary to go into the serum business.

The state of Ohio is supposed to be in the advance of all other states just now in the handling of hog cholera. They have finished a plant in which is invested $125,000. It has an eighty-acre farm with a complete line of laboratories and buildings for serum production. They are using it on every herd under quarantine, and none but the men employed by the state of Ohio are injecting one drop of it, supposedly because they know how to do it without exposure to anybody else. I believe that is the right way to adminster the simultaneous treatment. I could give you instances where the simultaneous treatment was used in a man's herd where no cholera existed and no immediate danger of it in the community.

I could give you one instance for which I have the word of a breeder of hogs who has carried the blue away from Des Moines a number of times. A neighbor came eight miles to see him, and started to go out to see the hogs. This man said to him: "You had better not go into hog barns; I have got cholera." He had given the simultaneous, and the serum had not been up to full potency, and some had died as a result. "Oh," said the man, "I am not afraid of cholera; I use so-and-so in the swill barrel; I have never had it and never expect to." They went in. At the right time, cholera broke out in the visitor's herd and spread to other herds. That was a secondary result from simultaneous treatment. If the first man had been under proper quarantine, such as is in vogue in Ohio, and should be in other states, the visitor would have been forbidden to go into that barn, and he would not have started the outbreak on his own farm and the farms of his neighbors.

I suppose you all know how serum is made. The first step, supposing that we have some serum and some virus on hand, is to select an adult hog, the bigger and stronger, the more resistance to cholera. That hog is given a full inoculated dose of the strongest cholera virus, and with it a full dose of potent serum. The result will be that he will be immunized. He may or may not be sick. As a rule, they are delicate for about three days and miss their meals most of the time; but at the end of ten days that hog is as well as ever, and is absolutely immune to cholera. The reason we know he is immune is that the next step in the process is to make a hyper-immune of him, and we give him enough virus to kill a thousand hogs like him if they are susceptible to cholera, and he never misses a meal. Ten days after he gets that big dose he is ready to bleed for serum. I should have said in the start that he must be a hog with a long tail; we can't use the tail-less hog for bleeders. Ten days after he is immunized we cut a piece off this tail until we can get it to bleed. We put him in a crate and have a clean sheet that covers the whole part, and the tail comes out in a little hole in the sheet. The tail is shaved and disinfected and sponged with alcohol, so that it is antiseptic and free from any germ infection; and we bleed him into a covered vessel from the end of the tail. It will bleed a few minutes and stop, and then by snapping against the tail will start again. Some bleed every seven days; some every ten. You bleed him what you think he can stand without getting weak. I think probably the general rule is ten-day intervals. These hogs are given a pretty good ration of feed. The Ohio laboratory has even offered the balanced ration, which is all right. Our experience is that you can't put them on full corn ration, or they will be too fat before you get through bleeding them. After you have bled him three times, if you have lots of tail left (I don't know why it is that an audience laughs at that!), you can re-hyper-immunize him. The theory is not properly worked out yet as to what quantity you should give him in that re-hyper-immunization. It is supposed from the experience that has been had in the production of anti-toxins that each animal is probably only capable of giving a certain amount of an anti-toxin, or a certain number of anti-bodies which are in the hog cholera serum. If the tail is short, and you don't re-hyper-immunize, ten days after the third tail bleeding, you bleed him from the throat, and get all the blood he has. His carcass is pork, accepted by the government inspector, and claimed by all to be the purest carcass of pork that goes to the market, unless he might have abscesses. If he has, the government inspector is there to see if he has any local abscesses from any of the injections that would condemn the carcass. The clot is taken out of that blood, and the serum of the blood goes to market, with a small percentage of preservative added to keep it.

You have heard something about the testing of serum. A fairly practical test calls for three pigs, and preferably from the same litter, in the hope that they will be as near alike in all their characteristics and in their susceptibility as it is possible to get three pigs. You may get in any litter of pigs one that is a natural immune against cholera and won't take it at all, but that is the exception. To No. 1 you give a full inoculated dose of cholera virus—nothing more. He should die in just ten days, if you have good virus—that is, in summer weather; in cool fall weather a virus pig may go to twelve or even fourteen days, and yet your virus may not be weakened at all. In the summer time, when the temperature is around 100 degrees, he may die in nine days, and once in a while in eight. No. 2 we give the full dose of virus and half a dose of serum; and No. 3 we give the full dose of virus and the full label dose that goes with every serum bottle. No. 2 may be very sick and pull through. No. 3 should not be very seriously disturbed. He may miss a meal or two, but is rounded out in a few days in fine shape. If No. 2 lives and No. 3 is not very sick, you may say you have good enough serum to send out.

The serum receives a little backset from one fact that I want to remind you of, and that is that the government starts us out on a half dose. If you have a serum of the highest potency, that original government dose will work very well; but every laboratory in the country has now on its label practically double the dose that we started with, and I think that counts for better results in most communities where the serum has been used for several years. The serum alone does not sicken a hog, and there is no possible way that you could inoculate a hog with good serum. The serum simultaneous gives the hog a mild dose of cholera and a dose of serum to carry him through it. It is the only treatment that should be called vaccination, because it produces the disease in a mild form.

You all know that pregnant sows are apt to abort in cholera. We have had some history of the simultaneous treatment causing abortion, so we sometimes warn a man against the use of it on sows well advanced in pregnancy.

Some years ago several men started out on the theory that they could breed a race of immune hogs. That matter has had a good deal of attention since the serum treatment came in vogue. Doctor Reynolds, of Minnesota, has experimented along this line, and there is a peculiar thing about this transmitted immunity—what there is of it—to the young. The hyper-immune—the one that has produced our serum—will not give birth to pigs that are any better immunes than from a sow that has had the simultaneous and is herself just a healthy immune—never hyperimmunized. That immunity in those little pigs lasts from three to eight weeks after birth. To prove that they are able to carry anti-bodies, Doctor Reynolds made serum from the blood of the little pigs born of immune mothers, and used it in simultaneous treatment against virus, and found it would protect the hogs just the same as the serum we produced. I had one report where some of these pigs from immune mothers at about the right age—eight or ten weeks—began to take cholera. In that herd was one litter that was still nursing beyond the ordinary nursing period. The cholera did not touch them while they nursed the mother. Whether that was due to the fact that they were getting the ideal diet, or whether the mother was giving them anti-bodies in the milk, I do not know; that has never been tried out.

Doctor Reynolds has worked out another proposition. He gives an account of one sow, called "the old red sow," in his reports. First let me tell you that he was working on theory—and they are now using it in Kentucky—of giving these pigs from the immune mothers a dose of virulent blood when they are three weeks old. They could stand that without any serum and come through all right with a very small percentage of loss. That would immunize them until they were quite good sized hogs and had reached the age when you could hope to give them a permanent immunity if you wished to use the simultaneous method on them. In using his virulent blood treatment on these pigs from an immune mother, he used it on the old red sow's first litter successfully; not one died. He used it on her second litter, and not one died. He used it on her third litter, and they all died. For some reason or other, she failed to transmit any immunity to that third litter. I don't know that the doctor has ever expressed an opinion as to whether she had lost her own immunity or not, but he re-immunized her by giving her another simultaneous treatment, and her fourth litter took the virulent blood without a bit of trouble.

The great difficulty in maintaining an immune herd is that you can't give permanent immunity to a young pig. Some of them you may immunize for life when they are forty pounds in weight, but there will be some more of them subjects for cholera any time after six months. The same is true of vaccination in the child. You know the changes are more rapid in the young, and therefore you can't promise a permanent immunity on a young, growing pig.

Now, you know the question is up with the legislature as to what they will do with this matter. The animal husbandry committee of the house have three or more bills before them. They had four bills to consider, and they undertook to write a committee bill, and got all muddled up on it, and the whole matter is back in their committee again; so they have not made any advancement. There is another bill before the agricultural committee of the senate, and they are going at it in a systematic way. They have sent out letters containing questions upon all phases of the treatment to a list of people. I furnished a list of customers who had ordered serum from us of our own production, and also of the Kansas serum we have been using this fall. Senator Allen is going to undertake to tabulate some facts or figures from these answers. Probably 300 letters went out.

There is a dispute about where the serum laboratory shall be located, and with that little campaign there has been some misrepresentation. Some say they are all ready to make it at Ames. I know every foot of the ground at Ames, and I don't think they are. Then, too, after having taken care of the kid for four years, when there was not provided half ration for it, I object to having it taken away from me now that it is going to be strong and able to stand and go some. You gentlemen can line yourselves up on either side you please.

There is one question as to whether every Tom, Dick and Harry should be permitted to sell serum to the people in Iowa. I say that every plant should be investigated, and first see if they are equipped to make serum, and then that they understand that there is some authority in the state who is liable to test their serum any day, the same as the milk inspectors in Des Moines and other cities walk up to a milkman on any corner and say: "Give me a bottle of milk." There was one bill written by the committee that said they might require the manufacturer to send a bottle of serum for a test. I think that is a joke. That was not in any bill that I had anything to do with, however.

There is one other phase of the hog business that I wanted to give you gentlemen. I got some figures from Doctor Melvin, chief of the Bureau of Animal Industry, in regard to tuberculosis in hogs that were killed in our Iowa abattoirs. I believe it is true that more of our Iowa hogs are killed without the state than within, and my figures probably cover approximately half of our production of hogs. Doctor Melvin says (I got this in November): "During the last year there were killed at the Iowa abattoirs 2,555,576 hogs. Of these, 167,676 were tubercular. And, by the way, that figures 6½ per cent of them. Those 6½ per cent, figured at 250 pounds live weight, $7 a hundred, amount to $2,934,347.50—nearly three million dollars' worth. So if that only represents half of the work, we have this to take home with us: that we have produced in Iowa in the last year $6,000,000 worth of tubercular pork. One tubercular steer in your feed yard may infect all the hogs that run in the yard, even if there are several carloads of cattle in the yard. They made one experiment in Ames on transmitting tuberculosis to the hogs with the milk of a bad cow, and in twenty days every hog had tuberculosis. Now, as an economic question, I believe we could afford to do something to curtail this $6,000,000 worth of tubercular pork, but it is a pretty difficult thing to get an appropriation to do things with. If a man is going to feed three or four cars of cattle and put the right number of hogs behind them, might it not pay him to test those steers and know when he starts the bunch on feed whether there is a case of tuberculosis in the yard or not? I say to every bunch of stockmen that I have a chance to address: "You can't afford to feed carcasses of dead animals to your hogs, because you never know but the carcass will cost you more money than it is worth from the point of feeding value. A feed of fresh meat to a bunch of hogs when they are not used to it physics them and throws them back two or three days, and there is no gain in it anyway. Some fresh meat might be fed clear through the period at intervals without upsetting the hogs and giving them a set-back, but you take my advice, gentlemen, and burn all your old carcasses. Don't bury them, either, because some day you will be burying something that you can never get rid of, and that will live longer than you will in the soil.

DISCUSSION.

A Member: How about this tankage we buy, then?

Doctor Gibson: The process of producing tankage should render it aseptic from infection. We have had some reports that would look as if cholera had been caused by tankage, but we have not been able to check that matter up. If such is the case, I am inclined to think that it was infected with cholera after it was made into tankage. The steam process ought to have rendered it safe.

You have heard a good deal of talk in the last few years about our loss of population. I will tell you that there were eighty sets of emigrant papers in my office this morning for approval. If you figure that there are eighty men owning those eighty shipments, and that they are heads of families, with five to the family, you have lost 400 citizens today. That is the way they compute school statistics, and you know most of those fellows are thrifty in every way, and they are going to get broader acres for the increasing numbers of the family. This is the one state in the Union that could put 400 men in condition to pull up stakes and take with them some live stock and go somewhere to buy a farm. We furnish all the northwestern country with their best citizens, and we furnish California with her best millionaires. In the last six months, we lost 4,720 of population, figured on the same basis. But you would be surprised, were you in my position, to see how many are coming back. They write me to "send me a permit to send my stock back to Iowa, and let Doctor So-and-So, at such a town, who used to test my stock, test me when I get there; I am coming back to good old Iowa; and will be mighty glad to get home."

A Member: How long after the hog is vaccinated can it be sold for slaughter?

Doctor Gibson: That is one thing that I wish Ames had told us. They have an experiment station and a laboratory equipped for experimental work; and the government has its experimental laboratories; but no man has yet told us when it is safe to ship an immunized hog to market. The more important question is when an immunized boar, for instance, can be shipped out to a customer to be put into his herd. Nobody has told us that yet. It is believed by some that some hogs that have the simultaneous treatment become permanent carriers of cholera virus, the same as some people become permanent or indefinite carriers of typhoid bacilli. We know that is true as regards typhoid fever in the human and this disease in hogs resembles it very closely. I can't answer that, and I don't know any man who can.

A Member: How long will immunization last?

Doctor Gibson: If properly done on any hog that weighs 100 pounds or over, it should be permanent; but on hogs under fifty pounds no man can say whether they are permanently immunized or not.

A Member: I have a brother living at Emporia, Kansas. Last year he got the cholera among his hogs. He got some of the serum from the Kansas Agricultural College and inoculated the hogs after the disease had appeared. He lost about eighty per cent of them, and afterwards it was claimed by some people that the serum was probably too old or had lost its potency.

Doctor Gibson: That could be, and that was serum only. The government has given us some tests on serum five years old setting on a shelf exposed to all the changes of temperature, and had it protect a hog against a proper dose of virus. Of course, that is an extreme, but it is believed that serum carried over a year is good, and if it was once good, it is liable to be good until you have used it, for any reasonable length of time.

They have learned some lessons in Kansas. They recommend now that you give a hog a dose of serum first and prepare him for the simultaneous, and then when you give him the simultaneous he will not be sickened by it, or killed, or so apt to develop cholera. Every firm that is at all conscientious tells you when they send you serum and virus that you are liable to lose two to five per cent of your hogs when you treat them. They view the average herd of hogs in Iowa as 100 in number—I think they would average that—and that means that two to five hogs are going to die from that treatment. What do they die of? They die of cholera. There will be another five per cent that will have spots on their bellies, showing that they have cholera and may pull through.

A Member: How long should it be between those two treatments?

Doctor Gibson: They should be ten days apart. They now call it three treatments: serum treatment, serum simultaneous, and double method.

A Member: I heard of a treatment when they gave them both the same day.

Doctor Gibson: That is the proper simultaneous treatment: put the serum in one thigh and the virus in the other.

MARKET WEIGHING OF LIVE STOCK.

BY JAMES E. DOWNING, DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C.

The present system of weighing stock to obtain the amount of freight at Chicago was inaugurated twenty-five years ago. Since then the number of head received per year has increased 7,550,206, or 78 per cent, while the valuation has increased $172,742,936, or 136 per cent. These figures are taken from the reports of the Union Stock Yards Transit Company, of Chicago.

To meet this gain, the facilities at the yards have been increased until there are now 500 acres of land occupied, of which 450 acres are paved. The length of the railroad tracks is 300 miles. There are 13,000 pens, of which 8,500 are covered. There are 725 chutes, and 25,000 gates. On hot days, 7,000,000 gallons of water are consumed from the twenty-five miles of troughs, fed by 90 miles of water pipe. At night the 50 miles of electric light wire furnishes current for 450 arc lights and 10,000 incandescent lamps.

This market was established at the close of 1865. There were no calves received until 1881. In 1912, there were over a half million calves received alive and 3,383 dead. Approximately 16,000,000 other animals were handled besides the calves during 1912, so that the claim, "the greatest live stock market of the world," which is made for Chicago, would appear to be fully justified.

I have gone into these details to impress you with the growth of the Chicago market in general, but what I desire to point out more specifically is the system now in use of arriving at the amount of freight to be charged shippers. While other things at this great stock center have advanced and improved, this system of weighing does not appear to have kept step with other things in the last twenty-five years, or since it was installed. One instance of the growth of the market that has a direct bearing on the present system of weighing may here be cited. I refer to the extension of the yards from time to time, which has necessitated the removal of railroad tracks and scales, until today the track scales of the Chicago, Milwaukee and St. Paul road, where their cars are weighed, are as much as twenty-two miles distant from the unloading chutes. After the cars are unloaded, they must be hauled that distance before the light or empty weights can be obtained. You can readily appreciate how much time such a method of weighing must necessarily consume on a road that stands second in the amount of stock delivered at the Chicago market.

Furthermore, in weighing loaded cars drawn slowly over automatic scales, as is the case at Chicago, the beam does not register anything under 100 pounds. The drawbars of the cars are not uncoupled, so that any downstrain goes as weight. The fractional part of 100 pounds and the downstrain, if any, may not be a serious consideration in a single car, but in a run of 2,000 cars they might well be so. The same things apply in like manner to the re-weighing on the railroad scales, which is done under the same conditions.

Again, the entire train is pulled over the scale at the rate of about three cars per minute, and by mechanical operation each car registers its own weight. It frequently happens, however, that the automatic device gets out of order and gives erratic results, without the knowledge of the operator, notwithstanding the care exercised to keep it in perfect working order. Such instances of incorrect weights have made necessary a refunding system, which consists of a settlement with the shipper on his hoof or sale weight, less an allowance for fill. To get these differences adjusted by all concerned, necessitates a delay in final settlement that at times approaches that indefinite period called the "limit."

The most important matter connected with the weighing system at Chicago is the delay which it occasions in the delivery of the animals. The records show that something like 80 per cent of all live stock is received at the yards between 12 o'clock midnight and 8 o'clock in the morning. It has been estimated that if the weighing on track scales could be discontinued, there would be a saving in time of from two to four hours in the delivery of the stock to the unloading chutes. You shippers all know the value of a good run to market, but it must be trying to lose this advantage through delays after arrival. My observation has been that animals need all the time they can get from daylight to 8 o'clock in order to rest and fill. Records I have made will, I believe, bear me out in the statement that stock fill best during this period under normal conditions.

The fill at market is a valuable asset to the shipper. A pound of fill at market is as valuable as a pound of meat put on in the feed lot. It brings just as much money. For example a loss of ten pounds of fill per head in a load of twenty-five cattle that sell for, say, 8 cents, means $20. That sum will not pay the freight in most instances, but it will pay a good part of it.

It is obvious, therefore, that delays at market may prove expensive, not only with cattle but with hogs, especially in hot weather after they have been kept cool in transit, as can be done by frequent showering. If they encounter delays, the loss through smothering might easily be serious.

In this connection it might be of interest to know that 27,703 dead hogs, valued at $481,062.60, were taken out of the cars at the Chicago market in 1912. It is estimated that ten per cent of the dead hogs received at Chicago are loaded dead at point of origin. Assuming this estimate to be accurate, and deducting it from the total sum, it leaves $432,956.34 as representing the value of the smothered hogs received at Chicago during the past year. These figures do not take into account pigs averaging about fifty pounds.

There are other details that have a bearing on the system of weighing now in use in Chicago, but those that have been presented appear to be the more important. It may be remarked in this connection that it does not seem consistent with modern methods to weigh a volume of business that reaches over $300,000,000 by a similar system that was installed when the business was only $166,000,000. In other words, since the present system was inaugurated, the check-rower has come into use, the self-binder, the hay fork, the manure spreader, the silo, the gas engine, the cream separator, and the automobile. These are but a few of the many instances of the progress of our time, and the things now established as necessary to our work. All serve to very materially reduce the amount of toil and the number of people employed, yet the Western Weighing Association, at Chicago, maintains twenty automatic and two beam scales, with night and day weighmasters for each, in order to carry on the business of weighing stock. These remarks are not intended as a criticism, but as a comparison of how the shipper has progressed at home with the instruments of his labor, while a system is still in vogue at the largest market in this country that would not be employed by a going business concern. It is not a very difficult matter usually to find fault with that which another has to do. The object of this paper, however, is not so much to criticise as to present a comparison with another method of securing the weight for freight charges which is in use at other stock centers.

I have already acquainted you with an outline of the situation at Chicago. I now wish to direct your attention to a system somewhat recently adopted at South Omaha, Sioux City, St. Joseph and National Stock Yards, whereby the weighing of stock in cars, before unloading, is done away with. I desire to state that my personal knowledge of the details of this latter method is confined to the plan in operation at South Omaha, but I am informed that the other cities mentioned have in operation the same general plan, although the details may differ somewhat. The main features of the system are as follows:

1. All weighing on track scales is abandoned.

2. The weights on all shipments are ascertained by the Western Weighing Association at the accounting office of the stock yards company.

3. The railroads convey the stock from the main-line trains by means of switch engines, immediately on arrival, placing the cars on the stock yards transfer tracks. The stock yards switch engines then take the cars to the unloading chutes, where the stock is unloaded and yarded.

4. When the stock is sold, the hoof or sale weights are taken to the Western Weighing Association by the commission firm, where the amount of freight, less a fill allowance, is calculated.

5. The fill allowance is deducted as follows: Cattle on the cars less than twelve hours, 500 pounds per car; cattle on the cars over twelve hours, 800 pounds per car. The allowance for hogs is 300 pounds per car for single-deck cars and 600 pounds for double-deck cars, regardless of the time in cars. No fill allowance on sheep. The weight of dead or crippled animals is estimated.

6. The weights on shipments of two or more cars from one consignor to one consignee, from one station, on any given day are averaged. For example: John Jones has five cars of cattle consigned to

one commission firm. One car weighs 20,000 pounds, another 22,000, another 23,000, another 24,000, and another 25,000 pounds. The combined weight of these cars is 114,000 pounds. The average weight of these five cars is 22,800 pounds. Assuming the minimum fill allowance of 500 pounds per car, this will reduce the net average weight to 22,300 pounds per car, and the freight on each car will be the same.

7. After the freight is figured on this basis, the commission man takes the slips with the car numbers and freight charges to the Stock Yards Company, where the handling charges are added. This closes the matter with the consignee.

This, in brief, is the later method of weighing, whereby hoof or selling weights are utilized as a basis for ascertaining the amount of freight to be charged for. Let us take a moment and analyze this method. I have weighed at different times and over various scales several hundred empty stock cars, to ascertain the amount of bedding contained in each. My experience is that it is not practical to attempt to weigh more than twenty-five cars in one train, for the reason that too much time is consumed in getting each car properly on the scales. So that the train of fifty cars of stock must be cut in two. There is no saving of time in the weighing of loaded cars as compared with empties; in fact, the empties are spotted more easily. The amount of slack is the same, but the engine can not control loads as well as empties. The point I want to bring out, however, is that weighing twenty-five cars, one at a time, means twenty-five bumps or jerks to a car of cattle, and I believe you will agree with me that twenty-five bumps do not in any way lessen the amount of shrink in the animals.

Men who weigh cars every day acquire more skill and speed in the operation, but my personal experience has been that I could not weigh more rapidly than one car in two minutes, and obtain correct weights. In fact, I never found a crew that could spot cars faster than one in two minutes. Under favorable conditions, then, the weighing of twenty-five cars would consume fifty minutes before the stock could be delivered to the transfer track. To this should be added the time necessary to make the trip from the railroad scales to the transfer track. It must be understood that the above time for weighing does not apply to the automatic scales at Chicago, previously referred to. The latter, of course, are much more rapid.

Delays and bumps, which are two important factors, having a direct bearing on shrink, have therefore been eliminated under the method now in use in South Omaha. As regards the delay, it is estimated that on the average an hour and a half in time has been saved the shipper in getting his stock unloaded; while as to the bumping, it would be indeed difficult to form any estimate of the saving to the shipper by reason of his stock being unloaded soon after arrival, so they will not have to endure the jolting necessary to weighing each car on track scales.

Another advantage which appears worthy of consideration consists in the fact that the hoof weights are recorded with a balanced beam that takes into account amounts under 100 pounds. Furthermore, the shipper has an opportunity of seeing his animals weighed if he desires.

In discussing the old and new system at South Omaha, I do not wish to be understood as comparing Omaha with Chicago. The system at Chicago of weighing over automatic scales is, beyond question, more rapid than the old system used at South Omaha. The thought I wish to present has to do with applying the new system at South Omaha to the Chicago situation. While this new method has only been in effect since March 16th, last, not one with whom I came in contact in South Omaha would give any consideration to a return to the old system.

There is one feature of this new system, however, that appears to be open to criticism. While the plan as a whole appears to be practical and sound, the amounts deducted from the sale weights as fill allowances are open to question. The stock yards people admit this part of the plan is a bit crude and uncertain. They started with the best information they could obtain, and are anxious to secure accurate and reliable data that will make these tariffs less liable to question. Once this matter is adjusted on a basis equitable to all concerned, there appears to be no serious objection to some such plan being generally adopted at all of the principal markets, so that shippers can have a uniform method of weighing that will avoid delays and jolts and come somewhat more nearly recording the exact weight for which they should be charged freight.

An informal discussion in regard to the manner of taking weights followed, participated in by Mr. D. D. Cutler, representing the Chicago and North Western Railway; Mr. Will Drury, and Mr. R. M. Gunn.

President Sykes announced the appointment of the following committee on resolutions: Will Drury, Sac; R. M. Gunn, Blackhawk; F. D. Steen, Muscatine; W. L. Drennan, Adams; F. A. Stilwell, Poweshiek; W. T. Hamilton, Washington; R. A. Lenocker, Madison; W. S. Bassett, Benton; J. C. Oliva, Iowa; D. P. Hogan, Cass; T. W. Webb, Ida; A. W. Pilmer, Cherokee; J. T. Chandler, Henry.

The convention thereupon adjourned to 9:30 a. m., Wednesday.

THE BANQUET.

On Tuesday evening, the annual banquet of the association was held at the Savery Hotel. This was the most largely attended banquet that the association has ever held, and was a most thoroughly enjoyable affair. Following is a report of the different talks made:

President A. Sykes: Friends of the Meat Producers' Association and Fellow Banqueters: We again celebrate the annual banquet of the Corn Belt Meat Producers' Association, I think in a very pleasant way. I wish to say in behalf of the officers of this association that it has been very gratifying to them to see the splendid audience here this evening, and to see the interest that is manifest in our association, that men have come here from all over the state to attend this annual gathering and this annual banquet.

I might just say here that this is the fourth one of these annual banquets that we have held, and every one gets better, and at every one the attendance gets larger. So we feel that we are growing in interest, and, as I suggested this evening to one of our friends, we are becoming more conspicuous year after year as an organization.

Nine years ago this organization was formed. Just about this time in the year, as I remember. This organization, I think, was not formed to take undue advantage of anybody, of any corporation, of any concern. If I have a proper conception of the object of this organization, it was simply to protect and safeguard the farmers' and stockmen's interests of the state of Iowa, and I think that the organization has attended strictly to business, and I think that we have enjoyed some beneficial results that have been done through this organization, and that this meeting tonight clearly demonstrates that fact and the interest that is manifested by you men who have come here to take part in this annual gathering. And if the organization is continued along the same lines, I know of no reason why any serious objection should be raised to it, because we have learned one thing, gentlemen, and that is as individuals we do not count for much any more. If we desire to accomplish anything of any great importance affecting our own interests, it becomes necessary for us to co-operate, to organize, to unite, to associate ourselves together in a way that we can bring a united effort to bear on certain interests, on certain measures, on certain committees, on certain commissions; and questions of that character that we take up we must take up in this way if we secure the desired results. And I think this association has demonstrated the fact that it can produce some very beneficial results to the farmers and live stock interests of the state if it is properly handled and conducted along the lines which I believe it was originally intended that the organization should be conducted along.

We have with us this evening a man who has been preaching co-operation and soil fertility and diversified farming and all of these questions that confront the farmers and the stockmen today, for the last twenty-five years, possibly longer, in the state of Iowa, a man whom we all love to honor and to listen to, a man, I might truthfully say, at whose feet most of us have sat and drank in the knowledge that he has imparted to us ever since we have been struggling to make a livelihood for ourselves and to care for our families, and tonight the first speaker on the program that I am going to introduce is that gentleman, Uncle Henry Wallace. (Applause.)

Mr. Henry Wallace: Mr. Chairman and Fellow Stockmen—It is a very great pleasure for me to meet you tonight. I believe I have met you almost every year. I know this association from its beginning. I had something to do with the founding of it, and of the guiding of it in its earlier years. And while you have been deliberating over your banquet, I have also been deliberating. I have been wondering whether you really know the important position that you occupy in the state of

Iowa and the middle west. Now, there are some men who have a very exalted opinion as to their position and their place in the world, but men who really do things are usually modest about it, and I believe that you belong to the modest sort. I have been wondering whether you know or realize how much of the fertility of Iowa, of the future citizenship of Iowa, of the future statesmanship of Iowa, depends upon the men who are present here tonight.

Iowa, I believe, feeds about eighty per cent of its corn. There is about twenty per cent of it that goes across state lines. The men who are the best customers for the corn are the men who feed live stock, and if the live stock business was to go out, you would hear a wail from one end of the state to the other, and you would not any longer talk about land worth two, three, four or five hundred dollars an acre. Upon the stockmen of Iowa, depends very largely the maintenance of the fertility of her soil, and there is no way, gentlemen, of maintaining soil fertility except by adding to it vegetable matter. Twenty years of farming wears out the vegetable matter in the soil which the Lord has been putting here for about 7,000 years, or such a matter. When you wear that out, you must restore it. How are you going to restore it except by growing live stock? You let the corn growers go on for another twenty-five years, and it will be a different Iowa from what you see now, growing corn and sending it off to the markets of the world for somebody else to make money out of. What nation on this earth ever got rich by sending crude raw material? You must send it in the shape of the finished product, and your finished product is live stock—the best cattle, the best hogs, the best horses—I won't say the best sheep, but we will come to that by and by—on the face of the earth. The only other way you can do it is by growing clover and plowing it under once in four years, and you are not going to do that. Nobody else will. You have therefore a most important place to take in this country.

Now, mind you, if you don't look out, you are going to hear something drop. Congress can not stand up against the hungry stomach, and the first thing you know the ports of the Atlantic and the Gulf will be thrown open to the cattle from South America, and you will have to sell your cattle at the prices that the South American will ask for his, on the Atlantic, Pacific and on the Gulf of Mexico. Then where will the corn raiser be? For the next thing that will follow is taking the tariff off corn, and the price you will get for your corn is the price at the port, less what the railroads charge you. Now it isn't these measly democrats that are going to do that altogether. (Laughter.) Not by any means. It is the men who handle "big business." And there is no politics in big business. We used to have a man at this meeting who gave us some grand addresses. You know who I mean—Murdo MacKenzie. You know where he is now? In Brazil, on a salary of $50,000 a year, looking after the cattle of John Rockefeller and Stillman and Morgan. Those men think in world ideas, and they know that sooner or later they will be able to get a ship subsidy and throw open the ports of the Atlantic to South American meats. What are you going to do about it? So I might talk on a long time, and probably not say anything but what some of you have read more or less in Wallace's Farmer over and over again. If you haven't, you ought to.

But I was thinking of another line. I was just wondering if you realize how much of the best things in this world of the revelations from heaven come through stockmen, how much of our Bible is written by stockmen. I have commenced to study the Bible lately. I have been looking at it also in the line of the stock business as well as other things. Now, it is supposed that Adam was a stockman. That isn't true at all. He was a gardener, a horticulturist, the father of all the insect pests. Of course they had no stock in the antediluvian days because they didn't eat meat. They were vegetarians. I don't know whether that is why they lived so long or not. But when you come down to Noah, they were allowed to eat meat. The old fellow went into the horticultural business again, and you know what happened to him. He got drunk. Really, the first great big stockman was Abraham. I was just reading today about that long trip that he made, six hundred miles northwest to get over the fords of the Euphrates and five hundred miles to get down to the promised land of magnificent stock country. Now, he traveled and roamed around there, but he went down to Egypt and got into trouble and had to be ordered out. And then I was thinking about that grandson of his, the fellow that put the spots on the cattle. If I ever meet him, I am going to ask him just how he did it, because I never could understand it. (Applause.) Then the next big fellow that we read about was a man named Moses, that was city born and city bred, a graduate of the University of Egypt, but he never amounted to a hill of beans till he got out in the country with an old stockman, married his daughter, lived there forty years, and that is the fellow that gave us republican institutions, representative government. And he got the idea from that old ranchman out there, his father-in-law.

Now, you go on down through all those old Scriptures, and you will be surprised to find the number of men through whom God has revealed His will that were stockmen. Take David. He was a good many other things besides a stockman; had some of the stockman's faults and some of his virtues, a splendid good fighter and liked the women. But you know he is the man that has voiced the highest emotions of human nature in all ages, and many of his old illustrations are those of the stockman. And there was Solomon. He was a big farmer as well as a good many other things. And so on, you might go on down through and see to what extent religious thought and philosophy and the highest conceptions come through men that were stockmen. Look at Amos, the farmer herder of Tekoa and the gatherer of sycamore fruit. And do you know "the glad tidings of great joy" that came to all people were first heard, not by the lawyers in the temple, nor the priests, but by shepherds watching their flocks by night—stockmen like you and me. (Applause.)

President Sykes: I have been a very busy man today. Somehow it has fallen to my lot to preside over this gathering from ten o'clock this morning at least up to the present time. I have done a great deal of talking, as you will recognize by the condition of my voice this evening, and I feel it would be almost an imposition upon myself, in face of the fact that we have got a man present here who can preside so perfectly at a banquet of this character, that I am just simply going to play flunky the rest of the evening and introduce to you our worthy secretary, H. C. Wallace, who will now act as toastmaster for the rest of the evening.

Mr. Wallace: Mr. Ingham suggests I continue the description on down through. I will not undertake that. This is an unusual meeting of our association in some respects. It is the largest gathering we have had around the table, larger than any that have preceded it. There are more young men here than at any other meeting, which gives us a lot of hope for the future, because those who first started this work are getting older as the years go by, and the young men must come on and take it up. It is unusual for another thing, for some of those who were the wheel horses in the earlier days are not here. We miss them. Some of them have dropped by the way, and we mourn for them. Some of them have not been able to reach here for one reason or another.

It has been our custom in the past, and I see no reason why we should depart from it now, that we first rather renew the old ties and call upon some of the men who were the powerful forces that started this machine in motion, and I am going to open my part of it by calling upon Mr. Ames, our first president, for a few words.

Senator A. L. Ames: Mr. Toastmaster, Friends of the Association—I don't know what I have done to the toastmaster or to the members of the association that I should be put off here in the corner and given no idea that I was to be called upon to say anything at all tonight. Your president has made the excuse that he has been a very busy man all day. I might say that I have been a very busy man for the past five weeks. I have not been thinking very much about the association. We have been considering highways and other things not connected with highways, that you have heard about more or less, and I have not been considering what you might want to do in regard to the association meeting. I was not able to be here this afternoon and listen to the different talks along the different subjects, the various subjects which interest the farmers and feeders of the state. I wish I could have been. The speakers no doubt gave you lots of information that I would liked to have listened to. We have been very busily engaged here in a corner by ourselves figuring out some problems of feeding and discussing other things of interest.

I want to say that as a member of the association I never have been sorry for a moment that I helped in any way to organize this association. I believe we have accomplished considerable good. We haven't made very much fuss about it. We have gone along and attempted to point out some of the things that should be remedied, and tried to show the remedy. I think I can see, and Uncle Henry has mentioned some of the things that are going to be of vital interest to the feeders of this great state and of this nation, and I don't believe there is another question, any other one question, that is of such vital interest today to the meat-producing interests of the United States as that of the ship subsidy proposition. I consider that the vital point. Also I am fearful for this great canal and the regulations which are going to be put into effect on the great canal, because it looks to me to be the opening wedge looking towards the subsidy proposition. And as sure as we sit here tonight, if that subsidy goes into effect, you will find that our meats will come in competition with all the meats of other countries, and I believe that that will sound the death-knell to the present values that you are now receiving, and even if our farms are kept up to this high fertility at which we now have them, that the values of the products which we grow on those farms will be depreciated very materially. I do not care to say how much, but I do undertake to say that when you come in competition with the cheap labor of South America and the Central American and Mexican states, that the values which we now get will be very materially depreciated. You need not think for a moment that those men who are thinking, as Uncle Henry says, in world-wide ideas, are for one moment forgetting that they control today all of the machinery for putting this meat into the hands of the consumer, and that is the first step which they are going to take to bring that into effect, because the more that they use, the better opportunity they have to reap their reward. It looks to me as if that was the keynote to the situation, and the thing for us to do is to put forth our efforts in every reasonable way to hold the balance of trade where it now exists for us here in the United States, and that is one of the future things which this association must undertake—the education of the people along those particular lines. (Applause.)

The Toastmaster: I suppose it is only fair to the gentlemen whom I may call out to say that it has always been our custom here to feel free to call upon any man who looked guilty, without any previous warning. Of course some of our visitors may have a haunting suspicion that they are likely to be called out, but our members never do have. I want to say this to you, that gentlemen in Des Moines who have attended our banquets have repeatedly told me after they were over that they were the best banquets and the best speeches that they had heard in this city. And if we had time to go through, I think we could take seventy-five per cent of the men who sit around this table and get some good speeches from them without any previous warning.

Now, I am going to follow that policy tonight, so far as our time lasts, and I feel perfectly free in doing it because I know our members will acquit themselves creditably.

We can not think back on the early days of the association and the fight we have been through without unconsciously thinking of one man who bears a good many scars in our behalf. He has reached what may seem to us pleasanter days just now than he enjoyed with us a few years ago, and yet I venture to say that if he told the real story of his experiences the past year, he would say that the troubles he had in our association were small indeed compared with what he has had since he left it. I refer to Mr. Thorne, our old attorney, and now a member of our railroad commission. We always like to hear from him. (Applause.)

Mr. Clifford Thorne: Members of the Corn Belt Meat Producers' Association—It of course always gives me great pleasure to face this crowd of men, and I owe so much to you that I always feel when I come before you that it is up to me to give sort of an annual report of what I have been doing. I got that habit from the old days. And I am going to describe just a few things that I have witnessed during the past year, because I believe that you ought to realize that you are still keeping up the fight.

About two or three weeks ago, I was in a room about this size, or smaller, and there was present in that room and arguing against a proposition for which I was fighting, a man about sixty years old, a man who is chairman of the executive committee representing all the railroads in the United States. Think of it! One man, the authorized representative of companies owning fifteen billion dollars' worth of property, with an annual income of over two billion. It is such scenes as that that make me realize so strongly the necessity for organization on our part. And during days of peace and quiet, don't forget to draw the lines tighter and get ready for some scrap that may loom up in the near future.

You folks are trying to make two grains of corn grow where one grew before. That is important. Some man has said that the greatest of people are those that can make two blades of grass grow where one grew before. But that is only half of the task. After the grass grows, it is somewhat important to know who gets the grass. (Laughter.) I would not care much if you produced four times as much corn as you do today if J. Pierpont Morgan got all the corn. The question of who shall own the corn is of equal significance with the problem of raising more corn.

In dealing with these problems, we have devised different methods of work, and during the past year I have had occasion to study somewhat the methods, of considering them, threshing them out, and reaching conclusions. Eight western state commissioners joined in filing a brief in the United States Supreme Court in the Sanborn rate case. We have taken the position that state regulation is worth preserving. And, after all, the final conclusion upon these great problems rests a great deal upon your conclusions. The leaders are merely our servants. They look to you and to me to know what they ought to say and what they ought to do. Now, is it wise to do away with state regulation? If it is wise to drop state regulation as to railroads, why not drop it as to all other interstate commerce? And remember interstate commerce is making up today the great bulk of all the business of this nation. This delicate balance between the state and federal government is the chief distinguishing characteristic of the American form of government. That is the feature that distinguishes our government from all other nations in the past. Greece and Rome, other countries, have tried federal government, but they generally failed. It was not till America came along and demonstrated to the world that it was practicable to join and combine that great central government with local home rule that we compelled peace and respect and order at home and abroad. That is what state government is.

Let me give you a concrete illustration of what it means, this home rule, as compared to national government rule. Suppose the Iowa State Railroad Commission should advance freight rates on canned fruit and vegetables, and two thousand other articles. Wouldn't there be a howl raised over this state? You would demand the reason for it. That is precisely what has been going on in the nation. It is so far away that we hardly realize it when it does occur. You have heard a great deal about the woolen schedule, and Schedule K is almost a household term. I wonder what ones of you here realize that during the past year the railroads proposed an advance on canned fruits and vegetables throughout this whole western part of the nation. The action of the state government is closer home. A few men can get together and push through a proposition of importance. You yourselves know that a few people in this association were able to do it. You folks were able to suggest a commerce counsel law in Iowa, a department of government of great importance and value. If that had been undertaken in the nation, you would have failed. As a matter of fact, it has been undertaken in the nation, and it has failed up to the present time. But we succeeded in Iowa.

A few years ago we adopted an anti-discrimination law, compelling the sale of products for the same price in different parts of the state, after making due allowance in the freight rates. That law has been copied in a dozen different states in the nation. It has since been upheld by the supreme court of Iowa, and a dozen different courts. That same law they tried to introduce in the nation, and it never got through. It is not yet made a statute by congress, and it probably will not be for years and years to come. You had slavery abolished in this country in states long before you ever had slavery abolished in the nation. You had a pure food law in the states before you had it in the nation. You had temperance laws in the states long before you had them in the nation, and the action just recently of the United States congress recognizing and enforcing the action of the state relative to temperance laws drives home the value and the importance of having state regulation. I hope that this system of state and national government will continue. Every important step of progress along these lines during the past generation has originated with the states and not with the nation. We had regulation in this state twenty years ago—the real article twenty years before they ever had it in the nation. Fifteen or twenty years ago the supreme court said valuation was the basis of all rate making, and there have been ten different states valued their property since then, and congress has been dilly-dallying with it all these years, doing nothing and accomplishing nothing along those lines. I simply want to impress upon you what I think is one of the important lessons that I have learned during the past year, that there is value in the state government, in the preservation of her proper functions, and I hope you will jealously do your part in guarding that.

One other matter that I have been interested in during the past year relates to the valuation of railroad properties. I was chairman of the committee on valuation of American railroads of the National Association of Railway Commissioners. Now there is a popular belief that the regulation of watered stock is the cure-all of many of our questions in regard to public service regulations. Many people think that when a company issues a hundred thousand dollars' worth of stock that they are entitled to a return on it. As a matter of fact, there is not a court in the land that holds that to be true that I know of. I examined the records of ten different states that had valued their railroad properties last year. Not one of those states used capitalization as the basis. In the Knoxville water case, the supreme court of the United States computed and estimated what should be the basis for the return, and they totally disregard all matters of capitalization. In the Consolidated Gas case the same is true. They are not entitled to a return on the capitalization. They are entitled to a return upon the value.

But the amazing thing is the great diversity in methods of finding value. No two men, I find, could go to work and value the same piece of property and reach conclusion, one fifty per cent greater than the other, though one was just as honest as the other. A few years ago a man up in Michigan valued the property of one railroad. Two years ago he valued the same railroad for precisely the same purposes. Remember, this is the same man. And he got a value of $20,000,000 greater than the other time, when he valued it two years prior, and there had been no substantial addition to the property in the meantime at all.

I found a fellow in Michigan who said on the little items of contingencies a railroad should be allowed ten per cent—an able and competent man. A fellow down in Oklahoma, at the head of their engineering department, said two per cent is enough. There is a difference of eight per cent. What will that mean if congress during the next few days makes a national valuation required by the Interstate Commerce Commission? It means a variation according to current methods, of more than a billion dollars on that one item of contingencies.

On interest during construction there is another problem. They agree that five or six per cent is a reasonable rate, but they don't agree over what period the road should be constructed. Over in Kansas it takes about a year to construct a hundred miles. Over in Nebraska, right across the line north of it, they say it takes four years to construct a hundred miles. There is a big variation. Over in Minnesota they say a railroad is entitled to a return on the value of its real estate. In Wisconsin they say it is entitled to three times the value of its real estate. There is another variation of several hundred millions.

You talk about these questions of graft and dishonesty. Those are small and insignificant compared to the determination of some of those technical problems of engineering questions. The great Gould scandal only involved twenty-three million dollars. The great Northwestern Pacific steal only involved about seventy million dollars. In the little question of contingencies there is a thousand million dollars involved. All of the graft in our insurance companies, all of the graft in the history of American railroads, since they were first constructed down to the present time, all put together, is not of so great importance—measured by the standard of dollars and cents—as the little problem of whether you shall allow two per cent or ten per cent, for contingencies in estimating the value of a property. The questions of watered stock and high finance are exciting and sensational, but when it comes down to bedrock, the great questions which you have to deal with are not steals and grafts so much as these business questions. I think we are learning that fact more and more as we get further into the discussion of these subjects.

Last summer there was an advance proposed in the freight rates on butter, poultry and eggs. Ordinarily that would have gone through without any trouble. Now you people are interested in that proposition. I have told it to a number of people before, but I have not described it to the organization, and I think that you would be vitally concerned. I asked the dairy and food department about what was the volume of the movement from Iowa to the Atlantic coast, and they told me. I confirmed that by reference to the State Poultry Association, and I found that that one little advance on butter, poultry and eggs, if allowed to go into effect, would cost this state over $360,000 a year. The matter was presented to the official classification committee in New York City by your commerce counsel Judge Henderson, and myself, and the advance was not put into effect. I am saying these two things right in the same breath, so as to give the proper impression. I don't want to make the claim that we caused it, that we prevented it going into effect, and yet as a matter of fact, it did not go into effect. That is merely an example of hundreds and hundreds of items that concern us. These questions, these problems that we are dealing with, are subjects that we must approach from a business standpoint, without heat, and at the same time fairly and honestly. I believe that you men out here on these broad western prairies, far from the mad mobs and frenzied financiers of the cities—I believe that you men will be the arbiters of the destinies of this nation, and when it comes to the solution of these great questions that are challenging the attention of thinking men of today, that you people will do more than any other body of people towards reaching a fair and just conclusion and determination of those questions to the best interests of our country. I thank you. (Applause.)

The Toastmaster: The members of this association have always shown a very lively interest in it, and a great many of our friends have shown an interest in it—a great many of the citizens generally who are not especially allied with the agricultural interests have nevertheless watched our course with considerable interest. And there is another class of gentlemen who have apparently kept interested. I refer to our railroad friends. We have found them whenever we appeared before the state commission or before the Interstate Commerce Commission. If we have gone before a legislative committee, we have found them there. And tonight, for the first time, I think, although that is not our fault, we have some of them with us. And I want to say for the gentleman whom I am going to introduce now, that while we have been on opposite sides of the fence most of the time, we have been opposed to each other almost every place we have met, yet we have always found in him a clean, fair fighter, and a thoroughly kind, considerate gentleman, whom it has been a pleasure to meet, although our interests have usually been exactly opposite. I refer to Judge Davis, the Iowa attorney of the Chicago and North Western, and we would like to hear from him. (Applause.)

Mr. James C. Davis: Mr. Chairman, and My Brother Beef Growers of Iowa (Applause): Some gentleman met me the other day, and he said: "Davis, how do you feel when the legislature is in session?" I tried to make an answer, but the other night I was at the theater and one of the actors described another one who was in love as having, "a God-save-us look in his eye," and I thought that might describe my general feeling while the legislature is in session. (Laughter.)

I don't know whether you gentlemen know it, but I am really qualified to be a member in good standing of this association. I have three cows. (Laughter.) I have a Jersey, I have a Short-horn, and I have a Holstein. And I use the Holstein milk to water the Jersey with. (Laughter.) I said to my man the other day—he is selling milk—I work for the railroad, and try to earn money enough to keep the place going. He told me he had sold 269 quarts of milk in January, and I said, "William, what are you getting?" He said, "I am getting ten cents a quart." I said, "That is a pretty good price, isn't it?" "Well," he says, "I am selling it all as Jersey milk." (Laughter.) I said, "How do you do it?" And he said, "The Holstein gives most of the milk, but I just flavor it a little with the Jersey." It made me think, and you will recognize I am getting into pretty high-class in this milk business. (Laughter.)

I wish that the men who represent the railroads and the men that are the bone and sinew of Iowa, as you men are, could get a little closer together. I wish I could get Senator Doran to believe me when I make some statement about railroads. You know I am pretty familiar with most of you. There is Bill Drury, and Justin Doran, and Mr. Ames, and Brady—we all served in the thirty-second together. We are like veterans. When we get together, we talk over our trials and battles, and I generally talk of my defeats. I have no victories. The truth of it is that if you would just take my standpoint and look at this situation—ordinarily there are about seventy-five or eighty railroad bills introduced in the legislature—all of them bad, as a general rule. (Laughter.) Most of them are not introduced to pass.

I heard a story of a gentleman who visited a farmer who was very prosperous and well-to-do, and the farmer had a great, big, black dog with a fierce bark. The farm was threaded by a railroad that ran along, and every time one of the big transcontinental trains came along that wouldn't stop at Buckingham, Ames, one of those you see go by and want to stop and won't, this dog would run out and bark and run after it till he had run himself down. And the man said "Why don't you break that dog of chasing trains?" "Oh," said the farmer, "it helps the dog, and it doesn't hurt the railroad." (Laughter.)

But, seriously, gentlemen, you men represent the great wealth of Iowa. You represent the thirty-five millions of broad, fertile acres that make this state great and prosperous. In a rather humble capacity, I represent one of the railroads that serves you. It has been stated a great many times that we have ten thousand miles of railroad here in Iowa. Our population is comparatively sparse. We have only about 215 men for each mile of railroad. And when you come to think of the business that the railroads do for you here in Iowa, I want to say to you that it is largely interstate. Mr. Thorne suggested, and there is, a great struggle going on now as to whether the United States of America, with the great Interstate Commerce Commission, shall control the railroads, or whether there will be that constant clashing and that serious question all the time as to whether this is local or whether it is interstate, but I want you to think just a moment of Iowa.

The local freight business in Iowa does not amount to ten per cent of the business that the railroads do here. Why? The whole state of Iowa is engaged in practically the same business. We are all in the agricultural business. Every county raises a surplus. No one county sells corn to another county in Iowa. No one county sells cattle to another county in Iowa. The truth of it is that the great products of Iowa go on these long interstate journeys. Now here is the serious problem. I don't claim that I am any better than anybody else, but simply because I represent a railroad, I want to stand with other people and be ranked as a good citizen. I have got just as many children as Harry Wallace—just exactly. I don't know but what if we live ten years, I will beat him. (Laughter.) We are both of us industrious and both of us red-headed. Why should we not succeed? (Laughter.) But what I plead for is a little better acquaintance. I say, here is the North Western railroad, with 1,700 miles of road, here in your state. We are assessed for taxation at fifty millions of dollars. Isn't it necessary that someone shall stand for that property and try to protect it? Should I be criticized if I go before the legislature with my friend Wallace, for whom I not only have a very sincere affection but a high regard? There was a time when Mr. Thorne and I did not know each other very well, but we are getting better acquainted as we go along, and we are getting to be mutual respecters of each other. Why, when this Corn Belt Meat Producers Association came into existence, I think Jimmy Ryan was your first secretary. And Jimmy came down and spent about ten days, and went up to Fort Dodge. Somebody said to him, "Jimmy, how did you get along up there?" He says, "Fine." "Did you meet the railroad fellows?" "Oh, yes," he said, "I got pretty well acquainted with them." "What kind of fellows are they?" "Oh," he says, "they aren't so bad. Why, there's that fellow Davis that represents the North Western. He is so dog-gone ugly he is fascinating." (Laughter.) So if we could just get a little better acquainted, if you could understand the railroad business a little better, if we could understand your business a little bit better, there is no reason why we should not get along better together.

I undertake to say that the relations between the people of the state of Iowa and the railroads were never fairer, never cleaner, and should be more cordial now than at any time in the history of the state. There is no discrimination. There is no free transportation. We have been legislated out of politics. I am a retired politician. I am not in politics any longer. And I don't see why we should not meet and settle these questions as business men. You can't be prosperous without the railroads prosper. You can't let the railroads fall into discredit and bankruptcy without feeling the effect of it yourselves. Born here in the state of Iowa, having the same pride of state that you men have, rearing my family in the same way that you people rear yours, why shouldn't we railroad men be able to meet you on a fair, square plane of equality, man to man, and thresh our business propositions out as business men, in fairness and without prejudice? That is what I stand for, and that is what I hope some day to see accomplished. I thank you, gentlemen. (Applause.)

The Toastmaster: A good many years ago—don't know just how many—seven or eight, I think—we had the governor of this state. He addressed us, I think, in the old Y. M. C. A. auditorium. I don't know what impression he made on the others of you who are here tonight, and who heard him then, but he said one thing that stuck in my mind. Towards the close of his address, he said: "You people are alive now. You have already accomplished some good. For goodness' sake, stay alive." That comes back to me every time we have our annual meeting. We have with us tonight for the first time since then another governor of Iowa, Governor Clarke, whom I am going to introduce at this time. (Applause.)

Governor George W. Clarke: Mr. Toastmaster and Gentlemen—I suppose I am treated tonight exactly as all the other men have been treated who have spoken—simply called upon without having had an opportunity to know that we were going to be called on. If I make half as good a speech as the other men have made here tonight, I will have made a good speech, because their speeches were extraordinarily good to my mind, every one of them. We have gone back here in these speeches to Moses and Abraham, and all the way from that time down to the present time, and the discussion of the North Western railroad. I found out Abraham was a stockman, and Moses was, and pretty near all of the other old Bible worthies were stockmen, and I wondered while Mr. Wallace was speaking if they had any such stock in those days as you men have. I don't believe they had. I don't believe they had the fine stock in that time that we have today. And then I began to ask myself the question, "After all, aren't we just beginning in this world?" I rather think that we are.

We hadn't made very much progress up to seventy-five or a hundred years ago from the days of Abraham and Moses. Not any at all, I guess, as far as transportation is concerned. Mr. Davis has been talking about that. Our transportation at that time was exactly the same that they had in the days of Abraham, and he was dozing before his tent down in the land they called Uz, or some other country down there, anyhow. Exactly the same sort of transportation then. But we have made a great deal of progress in the last seventy-five or a hundred years. These railroads have all been built in this country. This country has been developed within that time, and this stock that you men own has been developed so that it is a higher grade and a better grade of stock than Moses or Abraham or any other man that lived back of a hundred years ago ever knew of or thought of having. The fact of the business is that there was no man that lived a hundred years ago who ever thought that we would have such a country as we have here now. Absolutely beyond the dream of any man who lived a hundred years ago. And yet I think we are just simply beginning in this country—just beginning.

We are just beginning to do things after a permanent sort of a fashion, just beginning to think of questions of that kind. We are just beginning to deal with the great problems with which human life has to do, and it has to do with our methods of living and with the advancement of mankind. Only a few days ago the fire marshal over here laid on my desk his report, and I looked over it, and I saw a report of the fires in the state of Iowa, something like three thousand of them, with millions of dollars of loss. And then I thought we are just beginning to build permanent buildings here in Iowa, fireproof buildings. Just beginning, I say, to do things in a permanent sort of way, getting our civilization, if you please, upon a permanent, lasting foundation. It never has been in the history of the world upon what we call a permanent, sound, solid foundation.

And so I say we are coming up here tonight and discussing these questions here, and although the world is thousands of years old, we are just at the beginning, and it doth not yet appear what we shall be. But I tell you we do know that here in Iowa we shall be one of the greatest states in the Union. Mr. Thorne, over there, talked about the commerce of this country, and about the control of commercial affairs in this country, about state and interstate commerce, and the thought occurred to me that after all a country is just exactly what its commerce is, no more nor no less. Its commerce measures exactly what a country or what a people is. It is an exact measure of it. And whoever, if you please, controls the commerce of a country controls the destiny of that country. (Applause.)

Men talk about these great transcontinental lines of railroad across this country and the wonderful traffic that is carried by them, absolutely beyond the conception of any man who sits at these tables tonight, these arteries of commerce here. They constitute the very life-blood of this nation, the very life-blood of it. And I say measures what this nation is and what the commerce of this country is to be in the future, is an exact measure and prophecy of what this nation shall be in the future. And I think it is absolutely essential that the people of this country control, if you please, the commerce and the traffic and the means of transportation, because if they do they control the destinies, I say, of the country. So I think, with others who have spoken tonight, that it is absolutely essential that there should be this control. But Mr. Davis suggests, why can't we move right along together? And why not now, when you come to think of that question? Are your interests any different, after all, from the interests of the railway company? Are not your interests mutual? Can the one be developed without the other developing? Can there be any business growth if the other is depreciated in its capacity to add to what it has accomplished? We must all go up together. There is no question about that at all, and our interests are absolutely mutual interests. But I need not say anything further along that line. These are suggestions that come to my mind from what has been said here by those who have spoken before. I have suggested that we are just beginning in this country, and I think that is true. The world has just reached a point, if you please, a point of vantage. It has just planted its feet now upon a vantage ground from which it can begin to grow and develop into a mighty country, into a great world, if you please, and everything that we are doing now or trying to do is suggesting this tonight.

You take the legislature over here. What are we talking about over here? What thoughts are in the minds of the people. Why, the thought of the people is, we must begin to grow, to develop. In other words, Iowa, if you please, must put on some new clothes. It has worn its old clothes practically out, not quite down to the seat of its pants or the knees of its breeches, but that is the way people are beginning to feel, anyway. So we are beginning to make permanent roads, beginning to talk about better school facilities, beginning to talk about public utilities bills, and workingmen's compensation acts. These are things that were not thought of or talked about twenty-five years ago, if you please. All indicating the growth of the public thought and the development that lies right ahead of us in this country. And so I want to congratulate you, if you please, that you come together to discuss these questions of mutual interest, and I say they are of mutual interest; and, whatever you do, it doesn't make any difference what it is, is helpful to another. I think that any man's life is helpful to all other lives if it is any sort of a decent life at all. I think that is true with what a man does.

Now there may be men here, there may be men in this city, who are simply giving themselves to making money simply for the purpose of establishing a fine home, rearing their family, and all that kind of thing, but whatever his notion may be of what he is doing or what he is going to accomplish, he can not do it without helping you and without helping me, and without helping us all. I don't know how I can better illustrate my thought so you will get it than by saying: You go up and down the avenue out here. It is a beautiful avenue out here in the city of Des Moines, beautiful homes, fine homes. Nobody can go up and down that avenue at certain seasons without admiration for those homes and the beautiful surroundings that are there, the good taste that has been developed, and all that kind of thing. That man who built the home on the avenue, if you please, may have thought of nothing more than simply the expenditure of his money and perhaps a selfish interest in building a home, but throughout all time, so long as that home is there and those beautiful grounds are there, every man that passes up and down that avenue receives a benefit from it and an enjoyment in it, and he makes a contribution, if you please, to society and to the state. So I say it does not make much difference what our lives are, if they are along decent lines at all, they are helpful in spite of ourselves. And so when you come here tonight in this gathering to discuss questions of interest, you are helping all Iowa.

There was a thought suggested by Mr. Thorne a while ago that here in this country, compared with other countries, I thought of the reference Mr. Green, in his history of the English people, made in closing up that history, referring to the conditions in England and in Germany, the old civilizations of the world and what had happened there, and he wound up by saying: "Not along the Thames, not along the Rhine, not in the old countries of the world, but along the Mississippi river, in North America, are the great problems of the Anglo-Saxon race to be worked out." And that is where you live, if you please, in the heart of the American continent, upon that great river. You live in a country, if you please, which has in the fertility of its soil and in its promise of the future, greater promise than any other in the world, and when we have the great population that we shall have here in the years that are not distant in the future—we are increasing by millions every year. James Hill says we will have two hundred millions here within fifty years—a great population then is to fill this Mississippi valley, and great wealth is to be here, and a mightier people is to live in the center of the American continent, as predicted by Green, than has ever lived in the history of the world, and here are the great problems of humanity to be worked out. And you are beginning to work them out. You are beginning to lay the foundation of the solutions of the great problems of the world here, and I congratulate you that we are located right here in the center of the best country in the world. I thank you. (Applause.)

The Toastmaster: This association has been wonderfully helped by the press of the state, and by none so much as by The Register and Leader, of this city, of which Mr. Harvey Ingham is the editor. We have had the pleasure on one or two occasions of hearing from him, and we are fortunate tonight in being able to once more call upon him. (Applause.)

Mr. Harvey Ingham: My Brother Stockmen—I say that with a great deal of assurance, because I am a regularly admitted member of this association. I don't remember now what the occasion was for admitting me to membership, but I am very confident it was not the ownership of a dairy cow. (Laughter.) To prove my right to sit with a body of stockmen, I want to devote my remarks to matters directly pertaining to the stock business, at least to one feature of it. I was surprised when your toastmaster remarked that there were more young men present in this association meeting at this time than had ever been before, because I had only a few minutes before commented to Uncle Henry Wallace on the number of gray heads here in this body, and I was asking him where the young men were who were going to take the places of these older men in the stock business in the Mississippi valley. Now your toastmaster may be right that the young men are going to take up this business, but I tell him the statistics show that the consumption of meat has increased enormously faster than the production of meat in this country, that while the number of people in our cities and our great centers who are demanding high-priced steaks has increased rapidly, and the eating mouths are increasing, doubling and trebling, the men who are actually out on the farms producing beef have not increased in number. On the contrary, if anything, there is a gradual tendency to shrinkage. And the question before the stockmen now for the future is, What is going to hold the young men of this country to the stock producing business?

Now I am not going to attempt to answer that question any further than to say that rural life must be made attractive in the Mississippi valley. In the open competition of opportuunities in life there must be something just as attractive in rural life to the young men and the young women of the future as there is to town life, because, my friends, the money is going to accumulate here to such an extent that the young men of the future are going to be in position to choose what life they will pursue, and they are not going to remain on the farm simply because they have to stay there. And unless rural life in the Mississippi valley can be made attractive, the young men are not going to remain in rural pursuits.

Now I could say something tonight on the general subject of how to make rural life attractive in the Mississippi valley, but I presume it would be better, in the short time that we have, that I talk about something else. I am going to offer just one sentiment in connection with rural life, and that is our life in this great state tonight, and that is to encourage upon stockmen, upon all men, a more careful attention to public affairs.

Now it is very easy for us to flatter ourselves that we are giving attention to public affairs, but the fact is, my friends, that our primary elections and our other references and referendums of public questions to the people have been disappointing, and with the tendency in these later years of bringing government directly home to the people unless the people are willing to assume the responsibilities which this increase in rights brings to them, we are going to find ourselves seriously disappointed in some of the results. Now we have had in this city within the past ten days a referendum of the proposition to vote $500,000 of our money to the schools of this city. There are not less than 20,000 male voters in the independent district of Des Moines. There were probably 20,000 more female voters who were entitled to vote on that bonding question. A great effort was made to interest the women in this election. Out of a total number of votes in the district—certainly not less than 35,000—the highest vote polled was 5,000 votes, and that vote was so distributed and so cast that it was evident on the face of it that it was cast almost wholly with reference to local interests and local prejudices. As a referendum it was a farce. It cost this city $5,000 to hold that special election.

I say to you tonight that the initiative and the referendum will only be failures and followed by disappointments unless the people can be brought to a keener realization of the responsibilities of citizenship and the necessity of interesting themselves in these public questions. Now what has been the effect of the primary election? What have been the results? It has been necessary for our legislature to actually enact a law that names of candidates shall be shuffled on the ballot so that each man will have the luck of position at the head of the ticket in order to secure a fair chance in a primary election. Now what sort of a commentary is that on the voters of the most intelligent state in the nation? My friends, the people of the state of Iowa have got to take a more intelligent interest in their city, in their state, in their own duty and responsibility as citizens if they are going to be able to meet on equal terms the railroads they are dealing with, for they are intelligent to their own interests. It is going to be necessary for the people of the state of Iowa to vote more intelligently, and to devote more time to a serious consideration of their part in this government, and to come together more intelligently and effectively if they are ever going to compete on even terms with the corporations with which they are dealing. I agree wholly with Judge Davis that the time is coming when the railroads and the stock shippers and all people should come together in a fair and intelligent consideration of their mutual interests, but I say to you, my friends, that we are not going to come together on an equal basis until you and I and the rest of us come together with equal information and equal intelligence, as to our part of the bargain. It will require not merely this organization that you are members of, it will require not merely an organization that covers an individual state—it will require an organization that is national in its extent, that can appear before the Interstate Commerce Commission, because, as Judge Davis says, your interests are largely interstate, and you know it has been the orders of the Interstate Commerce Commission that have largely affected your rights and your rates. It will require an organization that is national in its extent, and in order to form such an organization it will require intelligence, it will require a serious consideration of public affairs, and it will require a stern determination on the part of every man in the state of ours to be at the polls and to do his full duty as a citizen.

Now it has been said here by Governor Clarke and by others that the great possibilities of the future lie in this Mississippi valley, but, my friends, they do not lie with the soil, and they do not lie with the cattle. They lie with the men in this Mississippi valley. The cities of this world have not been built where the wealth was, where the natural resources were, but where the men were. There is more gold tonight in the city of London than in any other one spot in the world, and yet there was never an ounce of the precious metal discovered in the British Isles. Mexico produces almost as much or more silver than all the rest of the world together, and yet there is not much silver in Mexico. Even the wealth of the mines is not where the mines are, but where the men are. The states, the cities, the business, the commerce of the world are built by men, and the future of this Mississippi valley is not with its natural fertility and not with its resources, but with its men. I want to say to you tonight that it is just as possible for Iowa to become a worn-out state, as some of the New England states are, as it has been for them. You can mine the soil of Iowa as easily as they have mined theirs, and if there is not greater intelligence in the people of this Mississippi valley, we will accomplish no more than they have accomplished. The future is with you and the future with you is in your individual capacity, doing your duty as a citizen. My friends, we can not rely on others. We must look to ourselves. And the great and primary duty of the people of Iowa is individually, each man by himself, taking an interest in these public affairs and doing his full duty, not only in his local township, not only in his county, not only in his state, but in the nation at large. I want to say to you that this is one of the serious problems of our time, is to bring home to the people themselves their responsibility to be well informed, and to act when the time comes. (Applause.)

The Toastmaster: At our last meeting, a year ago in December, I had the pleasure of introducing the only commerce counsel in captivity. He was only six months old then, and he filled our hearts with joy by the splendid optimistic talk he gave us. Now he is a year older, and he bears a good many scars of battle, and some of them have been delivered to him on our account. I know our members have a curiosity to know whether that same optimistic spirit pervades him now that did a year ago. I refer to Judge Henderson. (Applause.)

Hon. J. H. Henderson: Mr. Toastmaster and Gentlemen—It was a year ago that I was here, and I am thinking now that in reference to the work that I have had to do that I was a good deal smarter than I am tonight, because I know that I know a good deal more now than I did then. Some of these friends have said that they have been taken by surprise or were not notified that they were to talk. I was not notified, but I have not been taken by surprise, because I was fooled once. I came here last year and they set me at this end of the table, and I supposed that that was just a quiet, nice place for a guest to sit, and I was called on. And when they set me down at this table at the same place, I knew then that I was to be called on, and I really have not enjoyed my supper.

I feel a little bit more as if I belonged to you. I talked about being a lawyer and acquainted with lawyers' ways, and I think I said something that if it were in a gathering of lawyers, I would feel a little bit better, because I would know how much to believe of what they said. I feel tonight that I can go along a little bit further now and know somewhat of how much I am to believe of what you say.

I come on one line of my ancestry from tillers of the soil, and raisers of stock as far back as I can trace the lineage, and on the other side I come from tanners and shoemakers and office-holders, and I believe I have got a little bit of a combination of both strains in my nature, as I have farmed a little and have held office quite a little.

I have been thinking as I have been sitting here this evening and looking into your faces, that here is represented tonight the strength and the solidity and the permanency of this great state, a state of which I am proud because I live in the county in the state in which I was born, and live in the township in which I was born, and have lived in the same ward and precinct in which I have ever cast a vote in this state. I have great pride in the great state of Iowa, and it is a pleasure to be with those whom I know and recognize as being of the stalwart citizenship of the state that not only produces its wealth and its material resources, but adds to the standard and the dignity and the manhood of its citizenship. And I have been impressed that you gentlemen here tonight around this banquet table are taking a little bit of rest from the daily toil that you have in the management and looking after of your farms and your stock interests, and that it would be a good time and that it should suggest that there is something more than simply broadening its acres, improving its fertility and the improvements that are upon it, and raising the grade of your stock. That you are getting beyond that, and saying that there is due from each and all of you a service that is to be performed, a service—not that in its narrower sense, but a service that includes everything that tends to upbuild and to ennoble humanity, a service that every man owes for himself, for his family, for his community, for his state, and a service that must be performed before any man performs his duty, and I believe that the service that comes must be more than that to gratify ambition and acquire a larger amount of wealth, a service that brings good blood, not only to you gentlemen upon the farms and in the stock fields, but to those of us who occupy and follow other professions and other occupations.

I began the work a little over a year ago with but little knowledge, and have believed now, and have felt the feeling grow with me as the years have come, that there was something more than simply performing the daily routine of duties, something more than simply looking after and answering the immediate demands, but that there was a call upon me as upon others, a stronger and higher duty and better service in the interests of my people, and it is with that spirit that I have undertaken, during the time that I have been endeavoring to fill the office of commerce counsel, to give the service that I conceive is due from every man and due from a public official. That service—the best that we can do—will not reach what we would desire, but it is a service, when given with all of the force and might, and with all of the strength that is within us, is all that is asked, and when the service is rendered, rewards shall come.

The work has been pleasant in many respects. The work has been difficult in some particulars. It has been hard for me to change the habits of a lifetime in the trial and in the management and disposition of cases. There comes an investigation of new questions. I have not felt that there was any difficulty or trouble in determining the construction of statutes or the application of the principles of law, for that I have felt I had in some degree, in some measure, acquired during the years of a somewhat active life. I say I felt but little embarassment with those questions, but it was difficult when I had to sit down and take hold of questions or problems that were outside of the training that I had had during the years before. I have done the best I knew how and I am ready to continue doing that work so long as it shall be my duty to perform the duties of the office and hold that position.

Something was said about this being a great granary in the midst of the greatest nation, and that within this Mississippi valley will be found the population of this country. It has been truly said that this country does not become great and prosperous upon its material resources so much as it does upon its men, because the present and the future of the great growth of this country demand from me and from all others that greater degree of service that each owes because of the interests being devoted—you engaged in your daily occupation upon your farm, and the merchant in his store, and the others without organization, it must be that there shall be in some organization such as you have, the protection of your interests. But beyond that there must be, in my judgment, by the state provided, the persons who shall be charged with the duty of protecting and taking care of these interests, because the larger interests, the corporate interests—the railroads are particularly referred to—have their organizations and their corps of officers, and they have all of their different lines and departments, and specialists, and it is necessary that there shall be in those who undertake to represent the people a corresponding degree of intelligence and a corresponding knowledge of the facts, and above all an integrity and a faith in the people, and faith in the officer himself, and a desire that the full service exacted of him shall be performed.

I am pleased to be here tonight, because I recognize the very strong factor that this organization has been in the administration of the affairs of the state. I understand that it was largely through your efforts that the position which I now am trying to fill was created, and because of that I want to come and let you know how I feel in regard to these matters, and be able to stand before you and give expression to such words as I may that come from the heart, that you may understand that there is and will be an effort to perform that service which I believe is due. (Applause.)

The Toastmaster: Now, the hour is late, and I am going to close this program as I began it, with a word from one of the original members, one of the old wheel horses who has always pulled his full share of the load, Mr. William Drury, of Sac county. I caught him just as he started out here. (Applause.)

Mr. Will Drury: It is rather a hard position to call on a farmer to end up an evening of this kind, after hearing editors and lawyers, and the governor, and our worthy secretary and president. But I feel a good deal like the Irishman up in our country. One day he met Brady, who said: "Jim, what would you be if you wasn't an Irishman?" he says: "I'd be damned sorry." (Laughter.) That is the way I would feel if I was not a member of the Corn Belt Meat Producers' Association. (Applause.)

Mr. Ingham has called our attention to the duties we have today, the people of the state of Iowa. I am going to call his attention to what we have done in the nine years we have been an organization. If Mr. Ingham had known and followed back to the time a few of us came down here to plead our cause with the legislature, when they thought we had no case. Look tonight at the friends we have over here on the hill, and the olive branch extended by our friend Davis. He must realize we have made advancement. Mr. Ingham spoke about the gray-headed men. I can say the same as our friend and secretary, that the young men are more represented here than ever before. But I want you to go home to your boys and your neighbors, and next year have still more of the young men come, because the old wheel horses are getting to a point where they will have to quit. We want you to see that the boys come down to the Meat Producers' Association. Say to them that there is a class of men that is doing some good, and the state of Iowa is trying to do some good for you. And instead of the boys coming alone, you come with them. I don't think there is any way you can do yourselves more good than by sitting here and listening to what such men as we have had on our program today and this evening have to say. These things are problems that we have got to solve ourselves, and we can solve them in our homes and on our farms.

I oftentimes think—I hate to hear it, too, because it is a fact—that you will hear a lot of men who have moved to town say, "You hadn't ought to come to town. You hadn't ought to leave the farm." I have always been sorry to hear that, but I have noticed that very few of them ever move back. (Applause.) Jim Davis can talk about his dairy cow, but he isn't milking her. (Laughter.) I don't know whether Mr. Ingham has got a cow or not.

But I think we have spent a very pleasant time—I am sure I have—and I thank you. (Applause.)

WEDNESDAY, FEBRUARY 18.

MORNING SESSION.

President Sykes presiding.

The President: The first thing on the program this morning is an address on "The Railroad and the Stockman," by Mr. Fred H. Hammill, assistant general superintendent of the Chicago and North Western Railway.

THE RAILROAD AND THE STOCKMAN.

Mr. President, and Members of the Corn Belt Meat Producers' Association: I rather feel that I am doubly handicapped this morning in appearing before you gentlemen, first, for the reason that I was called to Chicago last Friday, and rather unexpectedly, you might say, handed a position that is a little bit out of my line, and I feel that the shock of that, as well as being asked by the vice-president to represent him in appearing before your association, is rather too much for me. Mr. Aishton, of course, is well known in Iowa by a great many of you shippers, and I feel that I have a difficult proposition before me in attempting to represent him.

I had an opportunity last night of attending your banquet. It afforded me a great deal of pleasure, and I saw there the faces of a good many men who are shippers on the North Western road. Being among the stockmen, I felt that a stock story and illustration of the red tape that the railroads are sometimes accused of would not be out of place.

On our western lines we frequently are called upon to send out engineers who are strangers to the territory. A few seasons ago an engineer from one of the northern territories, where they don't have much stock business, was sent out. He ran into a bunch of stock and killed a very fine steer. When he got it off the road, the fireman said: "It will be necessary for you to make out and sign a long report." That was rather new to him. He got one of the blanks with a lot of questions. The first was: "What did you see first?" "I saw a big, black steer coming out of the big tall grass." "What did you next see?" "I saw the big tall grass coming out of the big, black steer." It is needless to say that that was the most valuable animal in the bunch.

Last night we heard considerable comment from our attorneys and other professional men about their connection with the live stock business of Iowa, and I was very much pleased to hear our attorney, Mr. Davis, state that he was in the live stock business, having three cows out on the boulevard. That brought to my mind how close I came to being connected with the farming interests of Iowa. In our family there were but two boys. Father had an ambition to make farmers out of us. Early in life I smelled the car smoke; my brother had an aspiration for a college education, and the farming proposition was given up. I just state that to indicate how small a margin we sometimes have for changing our environment. Railroad men—who are we? We are boys coming from the same towns that you gentlemen do. We had the same opportunity you boys do, but we chose as our avocation the railroad business. We got into it with earnestness; we try to be fair and make it a success. Isn't it proper that we grant to you gentlemen all consideration in your line of business, assuming that you are working on the same basis, and shouldn't you grant to us as railroad men the same opportunity and the same consideration? And along that line, it is a little discouraging when the rank and file who have grown up into these official positions come into a town, and raise our families alongside of yours, to be treated as tools of soulless corporations. It is therefore my desire in speaking to you to treat the subject fairly on both sides.

Speaking from the railroad standpoint, the company which I represent has invested in the handling of the stock proposition 5,000 cars, representing $4,000,000. We have in the state of Iowa 236 stock yards, served by thirty miles of track. In looking over statistics in Chicago, we find that the receipts in the Union Stock Yards by the stockmen during the year of 1912 amounted to 255,088 cars of stock, of which approximately 58,000 came over the North Western railroad. In the month of December we find that 51 per cent of the stock received in the Union Stock Yards via the North Western railroad originated within the state of Iowa. We are proud to state that a little less than eight-tenths of one per cent of that stock was late for the market.

The first difficulty we encounter as railroad men is the distribution of stock cars from our congested terminals after the receipt of 1,000, 1,200 or 1,500 cars in Chicago. We all know the congested conditions in Chicago. We have to start on Monday morning, after these big runs, and organize trains to move these stock cars four or five hundred miles for the next day's heavy run, which is the next Saturday. About 25 per cent of these cars we have to set out at the Mississippi river for cleaning and repairs; consequently, we, as railroad men, start practically on the first of the week to get ready for the next heavy run on the following Saturday. The necessity for anticipation of orders on the part of stock shippers is one of the important features in the handling of the stock business. We recognize the difficulty of the stockmen on account of uncontrollable conditions in the market, but if you could anticipate a little closer and place your orders as near as you possibly can, it gives a better opportunity for the adjoining stock raiser to get his cars. The uncertainty also creates a hardship for the railroads. They might haul a bunch of stock cars four or five hundred miles in anticipation of your order for ten or fifteen cars for Saturday, and then when we get out there have it canceled; and we then have to take these cars to other points at considerable expense.

All railroads in the state of Iowa have schedules based on a main line Chicago movement. We start as early as five o'clock to consolidate this stock in small trains, and take them to junction points on double tracks; and you can recognize the necessity of all of us co-operating in order that these pick-up trains may get into the junction point, be consolidated, and arrive at the market at the proper time. You can readily recognize the difficulty and the disadvantage at which you place your brother stockman if a little inactivity on your part has caused a delay to his stock. The stock arrives at the Mississippi river points with probably thirty-five or forty cars in the train. Because of this unforeseen—possibly unavoidable—delay at some of these originating points, we are obliged on account of the twenty-eight or thirty-six hour law, to set out one or two cars in the train. The law must be obeyed, and we are not criticizing it, but the net result is obstacles to the stockman and the railroad in handling the stock. I only touch upon that point to indicate that we must be fair in each others' consideration for the other. Your interests are ours; ours are yours.

Another point is this: You who have never been in the railroad business hardly appreciate the personal effort required on the part of the entire organization in the handling of ten, twelve or fifteen hundred cars of stock. We are sometimes accused of having peculiar vocabularies. We start on Saturday afternoon and begin picking up stock. Between Saturday afternoon at five o'clock and Sunday night at ten or eleven o'clock every conductor, engineer, fireman, brakeman—the maximum force—is in the roundhouses and the stations. All telegraph operators, train dispatchers, all officials—superintendents included—spend their entire time watching the stock movement. We don't get a chance to go to church. How can you blame us for our vocabularies?

In looking over the records in Chicago, we find that 55 per cent of the stock received at the Union Stock Yards arrives on Mondays, 25 per cent on Wednesdays—the two large markets—and 20 per cent during the balance of the week. We also learn that the stock market for hogs opens at 8:00 a. m. and closes at noon; for cattle opens at 10:00 a. m. and closes at 3:00 p. m., practically four hours a day, two days in the week. Eighty per cent of your stock that arrives in the Union Stock Yards is handled in practically eight hours on two working days out of a six-day week. The point I wish to bring out on that is, could we not with justice, and probably advantage to both of us, have some better or more uniform arrangement of our stock markets, so as to prevent the railroad men all going down at one load?

We frequently hear this remark—I have in my last few years' experience in Iowa: What is the matter with Iowa? What is the matter with the stockman? We will say now: What is the matter with the railroad man? I say, gentlemen, nothing with any of us. Iowa is one of the most beautiful states in the Union. I came here, you might say, an emigrant, ten or eleven year ago. I have worked up and down your prairies. I consider it my home. And being appointed to this position in charge of the state of Iowa, I consider it one of the best positions to which I could have been appointed on the North Western railroad. There is nothing the matter with the railroads or stockmen. What we want is a little more thorough recognition of each other's class; we want a better acquaintance with each other. We are of the same family; we are all after the same ends, to make the best success possible of our business. We grant that to you, and hope to have the same consideration given us.

In conclusion, I would like to say that in coming to the head of the operating department of Iowa, I want to solicit from you gentlemen your co-operation and assistance in every way possible. If you have any difficulties in which we can help you, we would like mighty well to hear from you, and our local representatives and myself will be glad to come on request and go over the situation with you. If there are difficulties that can not be overcome, I assume you, gentlemen, we will put forth our every effort that our experience and our ability as railroad men to handle the transportation business.

DISCUSSION.

Charles Goodenow, Wall Lake: In regard to billing what we call mixed stock, I shipped a car of sheep and hogs, a deck of each, in a double-deck car. I put the sheep by themselves and the hogs by themselves; the first in the lower and the second in the upper deck. I did that for the reason that I only had one deck of sheep. The rate, as I figured it, would be 23½ cents, for the reason that the rate on hogs is 23½ cents. The rate on a double-decker of sheep would be 23 cents. When they arrived in Chicago, they charged me 25 cents for single-deck sheep and 23½ cents for single-deck hogs on that one car. I would like to know why they should charge me for two cars when only one was used, when the rule says plainly that you can ship mixed cars, and they shall take the higher rate with the higher minimum. The railroad men told me that if I had put some sheep in the lower deck and some hogs in the upper deck, they would have had to charge me 23½ cents for 22,000 pounds —the sheep minimum and the hog rate. The rule says also that you can mix them whether in a single or double-deck car, but in building the partition you must not use any nails. Of course, I can see that they want it done as carefully as possible, but how would a man build a partition without using nails and a hammer? That is what I want to find out, if anybody can tell me.

Mr. Hammill: Years ago a temple was built without any nails; speaking about the rate, that is a matter handled by the traffic department. Mr. D. D. Cutler is here, and I know he will make a note of that proposition and will be glad to advise you in that specific case. In regard to the mixing, I don't think that made any particular difference, but Mr. Cutler will advise you about that.

Mr. Goodenow: I had this up with the traffic department, and put in a claim for the difference. I forget the exact amount of money, but it was quite a sum. It looked to me as if I was doing the railroad company a favor, because they all admit this is the day of tonnage. If I could put all my stuff in that single car, wouldn't it be better than for me to use two cars? Why should the company penalize me for trying to protect their interests?

Mr. Hammill: I am going to enlighten myself on that, Mr. Goodenow, and I take it that Mr. Cutler will be glad to take it up with you.

Mr. Goodenow: You will find that occurs quite often, because the stockmen through the country are doing that.

H. C. Wallace: There has been a good deal of complaint on the part of the stockmen against the over-filling of these stock men's cabooses. I have a great many reports from off your road that there have been some very bad conditions there. Among other things, our report calls for the number of men who are traveling on that caboose who are not entitled to—that is, who are neither shippers nor bona fide employes of the shippers. This association has gone on record as being utterly opposed to the use of stockmen's passes by others than stockmen. It seems to us that the responsibility for that misuse of the pass might be charged to the station agents of your roads. Now, while you are here, tell us about that and what you are doing to prevent that misuse of the pass.

Mr. Hammill: There is no question but there is considerable misuse of the stock contract.

Mr. Wallace: Whose fault is it?

Mr. Hammill: The agent is a servant of the shipper, and wants to be in right with him, and of course he accommodates him to that extent. He is wrong in doing so, but the first wrong is in the request of that consideration. At Clinton we kept a record for quite a while of the number of stockmen that came with each train. My recollection is that we at one time had one stockman accompanying every three cars of stock. We also tried to sort out which was the stockman and which was not. We found at least fifty per cent of the men coming in were not stockmen; they wore collars whiter than mine, and their hands were not any harder. That is one thing that the stockmen must overcome; you can help us a great deal on that.

Mr. Wallace: My contention is that your station agent knows very well whether a man is a bona fide stockman or not, and that, as a matter of fact, your station agents are largely responsible for this misuse of the pass. If a merchant or boy around town wants to go in, your station agent knows that fellow, and that he does not belong in the caboose; and yet he connives at the thing and permits the abuse, with the result that the stockman himself is compelled to occupy a car which is filthy and overcrowded, and often has no place to sit. Don't your regulations forbid that, and can't your station men absolutely prevent it? There might be exceptional cases where some neighbor out in the country might go, but in that case he is properly an employe of the stockman.

Mr. Hammill: Just how far the agent would go to discriminate as to whom to assign to be the legal man to be in charge of the stock is rather a fine point, and if we get any improvement on that it will have to be done by the co-operation of the stockmen. We would guarantee our support from our side of the fence to help you gentlemen do away with that practice. If you folks will bring it up with your stockmen and indicate to them what it means to them, and state that the railroads are willing to help on that proposition, we will guarantee to do our portion of it with our agents and indicate to them that we want to arrange so that the stockmen can have room to take care of themselves properly, and I am satisfied we will see quite an improvement.

Will Drury, Early: Now that you are out in this state, permanently I hope, I would like, for the benefit of the stockmen out of Sioux City, to have the weights of the stock changed from Sioux City out. There is no man who buys cattle in the stock yards of the west who doesn't get anywhere from 50 to 100 pounds fill. At the stockyards at Sioux City, the railroad company takes the buying weight of stock cattle and subtracts 300 or 500 pounds, and charges freight to the shipper on that weight—when, as a matter of fact, it is anywhere from 1,000 to 1,500 pounds more than he should pay for. I bought a load there in November. I thought I knew my business pretty well, but the fellow that billed them knew more than I did. I weighed them about noon, and they were not shipped out until that night. When I got my bill, I think there was 300 or 500 pounds subtracted, and just to see what I had been paying for, I reweighed the cattle, and I can make an affidavit—I have the figures with me—that the shrink on those cattle was seventy-seven pounds to the head. There were twenty-six cattle in the car, and the excess of freight was right around 1,500 pounds.

Mr. Hammill: As I understand it, that stock came in from some northern point to the market. You bought the stock and wanted to ship it to Sac City. You are billed out with the receiving weight minus so many hundred pounds, and your theory is that the stock should be weighed before it is shipped out?

Mr. Drury: Yes, or take the sworn statement as to the weights at destination.

Mr. Hammill: That is a matter that I would not care to reply to offhand; but I will give it proper consideration with the traffic department.

The President: We will now hear from Mr. W. M. Whitenton, general manager of the Rock Island.

Mr. President and Gentlemen: I have not come prepared for any particular discussion. I didn't know that I would be called on. In fact, Mr. Wallace only yesterday invited me to come over to listen to Mr. Hammill's talk, and I was very glad to do so. However, I am very much pleased to be here, and to meet you gentlemen, representing one of the greatest industries in this state; and as a representative of one of the state's transportation lines, I want to say to you that I am very much interested in the transportation of live stock. The interests of the railroads, the stockmen and the farmers are mutual; there are no insurmountable barriers between us. The trouble is, as I view it, that we don't know each other. The railroad man assumes that he knows all about your business, and just how you ought to conduct it, and he doesn't want anybody to tell him anything about it. The stockman, of course, knows all about his business, and he thinks he knows all about the railroad's business, and he wants to regulate it. When we get in that attitude, our horns stick out and our hair sticks up, and we get a club and go after each other. You never can accomplish anything that way. I want to say that I am no fighter. I think that ninety-nine per cent of these imaginary troubles can be settled and adjusted by getting acquainted with each other. I have been in the railroad business for a good many years (although I am not very old; I don't want anyone to misunderstand me on that), but I have never yet gone into a community or gone before any body of men to discuss a question that was not settled fairly satisfactorily to all interests. Neither side always got just what it wanted; there have to be concessions; but after we get better acquainted with the subject, and know all of the details and the facts on all sides, we have a different opinion about these things. I am interested in the stock business because it means revenue to the interests that I am trying to represent, and also for another reason. My friend Hammill said he came near being a stockman, but I can go him one better. I was born and raised in Texas; my father was in the stock business practically all of his life. He owned a great many thousand head of cattle in his time. I spent nearly four years of my life on a cattle ranch. The first railroad train I ever saw was after having gone with a herd of about 28,000 cattle from down in western Texas. We started below Brownwood, and drove across the plains to Dodge City, and there shipped them. I saw the first time in my life the black smoke of a railroad train, and I took up with it after that, and have been following it ever since. So I am interested in the stock business and the stockman from that viewpoint. I have many very pleasant recollections of my four years' experience with the cowboys. I was the kid of the bunch, but they took pretty good care of me. We had lots of good times. They used to put me on a bucking broncho, and once in a while they would get one that would throw me twenty or thirty feet in the air; and that was lots of fun—for them. It wasn't much for me, but I had just about sense enough to try it again when they would tell me that I was the best rider in the bunch, and the only one that could ride it.

But I am interested in the stock business and the stock transportation; I want to know more about it. I want to know what your needs are. The Rock Island railroad has more mileage than any other railroad in the state of Iowa. Our stock business is not as heavy as the North Western's. I would like to know personally each shipper of live stock in this state, if it were possible. I would like to have you tell me what we should do, in your opinion, to improve our service. (Voices: Get them in there in time for market. Get us cars when we want them.)

Those are all very pertinent, and we might quote statistics. I happen to have in mind the fact that in the year 1912 eighty-seven per cent of the stock that we took into the Chicago market went in there on time, and were unloaded on time; thirteen per cent of it was late. It is the thirteen per cent, of course, that should have been on time. We could go into defending our service, and we might say that the stockman has not done his part in every instance. I know of a few instances where stockmen, it seemed to me from my way of thinking, have been very arbitrary in their time of loading. They wouldn't load except at a certain specified time, or until the train got there, although the facilities were such that they could have done so. However, it is not always true that the facilities are right; the railroads are in many ways to blame for a good deal of the trouble. We depend a great deal—and necessarily so—upon what our agents and employes tell us about these things, and we don't go into it deep enough to get all of the facts. It is a very serious problem to get competent men who will take an interest in the performance of their duties as though they owned the property. I have always been an advocate of the idea that a man occupying a position as agent, clerk, telegraph operator or conductor should run his business just as though he owned the property, but it is a very hard thing to get men of that kind. They will snap you up when you go in and ask questions that you have a right to know, and they will do many things that are bad. The managing officers of these properties do many things that are contrary to instruction that we never know of, and the railroad, of course, is judged largely by the kind of a fellow that the local agent is. Just a short time ago, I told one of our agents that there was no reason in the world why the local agent should not and could not be the biggest man in his town or community, if he is the right kind of a fellow. He comes in contact with more people, probably, than any other individual in the community; he has better opportunity for being posted on general conditions and general business through the country than anyone else; and if he is the right kind of a fellow and taking an interest in his work as he should, he ought to be a leader in that community, helping to mould public sentiment, finding out what the shippers and the patrons of the transportation company want and desire and need, and bringing that constantly up to his managing officer, superintendent or general manager; but you will be suprised to know that there is very little of that going on. I have been in this territory nearly a year; I have solicited agent after agent personally to write me the conditions and tell me the sentiment of the people of their communities. I have spent in the year 1912 twenty-four days out of every month out on the line of road, trying to get familiar with the needs of our property. I know that there are many things that we ought to do and that we can do, and that we are not doing. First, however, before I can remedy things, I must know what the trouble is. It is only a short time ago that Mr. Wallace was kind enough to bring two or three gentlemen from a town on our line up to my office. They had a tremendous grievance when they came in there. We sat and discussed the proposition, and just a few days ago, Mr. Wallace, I got a letter from one of those gentlemen, stating that the things he complained of had been entirely corrected, and that the service and operating conditions were going more satisfactorily at this station than they had in the last ten years. We can correct seventy-five per cent of the troubles that are now bothering you if we can get in touch with you gentlemen. I solicit most heartily your co-operation. I will sit down and discuss the matter with you, and tell you my side of the trouble, and you tell me yours. I won't promise to do everything that you suggest, but I will be fair, and if I can't do it, I will tell you why I can't. Now, we are not always reasonable, and you are not always reasonable. We have got to find the common ground upon which we can stand. We have got to find the conservative, middle ground. We have got to approach and consider this subject of railroad transportation as one of mutual interest to each of us, and we have got to meet it with that idea in our minds. We can't do the impossible, and very frequently we don't do the possible, because we don't know about many of the conditions that are wrong. And sometimes when we do know about them, we don't do anything to correct them, and of course that makes people sore and does not have a tendency to inspire confidence in the managing officer. Our shortcomings are many, I know, but it is my sincere desire to remedy those things just as rapidly as I can, and we can remedy some of them by having friendly co-operation with all of the shippers. There is no class of shippers in this state that require railroad transportation of the character and class that you gentlemen do; you have got to have it in order that your business may prosper. We want to give it to you. You may ask, why don't you do it? I am doing all that I can, with the information that I have, to give it to you. I know that in many instances it is not satisfactory, but if you will get in communication with me, and tell me the difficulties at your place, and keep on telling me about them, I will keep on endeavoring and trying to remedy and improve the service.

DISCUSSION.

J. C. Oliva, Marengo: Last month my neighbor and I made up our minds that we would ship our cattle, and we were going to ship together. I ordered the cars for both of us about a week ahead of time. I think I ordered them on Thursday morning to ship for the following Tuesday. We were going to ship two of cattle and one of hogs, and I ordered three cars. On Monday I found that I couldn't get the hogs together, so I countermanded the hog car. There were three cars on the track; one of them had the draw-bar pulled out; the other two were apparently good cars. I gave my neighbor the best cattle car of the two. We got them loaded up probably about twenty minutes before the train was due, and I happened to walk around there and saw that one end of my neighbor's cars was off from center on the truck. I called the attention of some of the men around there, and they said it would never go. I informed the agent, and he said they wouldn't take it. Then I went to urging the agent to furnish us another car, and he wired to places where he thought he could get it, but the dispatcher told him there was nothing moving. We had the contracts made out, ready to hook on and go. The agent wouldn't guarantee him a car for the next day. There was a stock car loaded with lumber just across the track at the station, but there was too much lumber in it to unload right away, so he took the cattle home; but the agent wouldn't let him take them out of the yard until he returned his contract, which he did. I had gone on with mine. If he had got the car the next day, the market was lower, and there would have been considerable loss to my neighbor. He is a good sort of a fellow, and didn't put in a claim against the company, and I didn't urge him to. I guess it was a good thing, because he still has his cattle, and the market is doing better. But you can realize what a disadvantage it was, and humiliation, after he had calculated to ship and had driven his cattle several miles to town, not to get the cars, after they had been ordered a week ahead. When I got back from Chicago, I noticed that there was still one car on the track with the draw-bar pulled out. I heard afterward that the car that was off center had been loaded with sheep the Sunday before, and unloaded; so the agent surely knew the condition of the car before we loaded.

Mr. Whitenton: Of course the natural assumption of the patron is—and it is correct from his viewpoint—that of course the railroad management are responsible for those cars being in bad order, and that they sent them out in that condition knowingly. Of course we don't do that, but you can't understand why the cars would stay there a week in bad order. One car was loaded a week previous and unloaded, and the agent knew of it. Some trainmen in setting that other car out, pulled the draw-bar out, and the probabilities are that they made no report of it. It was the agent's duty to take the check of his yard every morning and evening and know the condition of every car there; and if he is going to need stock cars put in there by the dispatcher for loading the following day, he ought to get busy and get someone out there to put a draw-bar in that car. A couple of men with jacks could have put that car back on its center; it is a smaller task to do that than to put in the new draw-bar. Two men could have cleaned the whole thing up in three hours if some one had gotten busy and taken the interest they should in the company's welfare and had a proper idea of accommodating and taking care of the shipping public.

Mr. Oliva: As to the car with the disabled draw-bar, they couldn't have fixed it out there, because it seemed that the timber was all nicked and caved in; but if he had ordered the three cars as I directed, we would have had the two cars. All the way down to Chicago I saw stock cars loaded with coal and other freight coming in. That didn't look right to me, but of course I am not a railroad man and am not here to dictate.

Mr. Whitenton: Of course the railroad companies are doing just as you are: trying to conduct their business with the least possible investment consistent with a return on the investment. We are loading stock cars with company coal or other coal going to the northwest, where we get a load back. It is not a question of having sufficient stock cars in this territory to take care of the business, because we have. It is simply a question of distribution and movement. As the gentleman before me said, it is quite a problem at this time to get empty cars out of Chicago. There is quite congestion of traffic on all lines in Chicago at this time. We have this morning in Chicago about 1,500 cars of grain, waiting to be unloaded at the various elevators, and they are only unloading at the rate of about 300 cars a day. That makes it difficult to get our cars through the yards and get them moving as fast as we should.

Mr. Oliva: The section men were right there, and we asked them whether they couldn't put the car on the center, and they said that they didn't have any jacks, and didn't want to tackle it. I supposed it was out of their line of business, and we didn't insist on it; but the conductor said the track jack could have put that back on center in a short time.

Mr. Whitenton: Any ordinary car can be put back on its center in thirty minutes. That is another case where they didn't do what they should.

J. F. Eisele, Malcom: Our stock yards are so situated that we have to push the cars uphill to get them to the chute. It is a little bit on the wind, and the same iron is on there that was there thirty years ago, and I guess the same ties, and when it is a little cold it is almost impossible to push the cars up to the chute, and the most of the time we have no crowbar. The Brooklyn section hands claim the Malcom hands steal their bars, and the Malcom hands say they steal ours. That has been a standing complaint to my recollection for twenty-eight years, and from Mr. Preston down the line they have all said they were going to fix it. The last few years we gave it up; we got promises, but we never got it fixed.

Another thing. We think we have as fine an agent in our town as there is on the Rock Island. He is courteous, and seems to be everything that he should be; but if we try to find out something, he tells us that the dispatcher will snap his head off if he asks him a question. We never can find out whether or not we are going to get cars, and it is often a difficult matter to learn where the train is. As near as I can find out, the reason the stock leaves our station and goes over the North Western and Milwaukee is because the agent can't tell even the night before whether we will be able to load a car the next morning, unless they are standing on the track.

I was on the train going to Chicago three or four weeks ago, and at West Liberty they let one of your trains off the B., C. R. & N. come in ahead of us, and they had a lame engine. Finally we got to Walcott, and there were two good-sized trains of stock—probably thirty or forty cars to the train—and we were behind this engine that died at Walcott. We were four hours getting coupled up as near as I can remember. Of course, I don't understand why. The railroad men were using some big language, and they didn't seem to be to blame for it; they were in a hurry, trying to get out.

Mr. Whitenton: I am very familiar with that particular incident, and I want to say to you that it was one of the rottenest pieces of railroading, if you will excuse the language, that I have ever been in contact with. There was absolutely no excuse for it. It is another case of the employes being absolutely incompetent, and still they had been there for years. They said their engine had been lame all day. It was put on the train at Cedar Rapids, and came right out of their roundhouse. The engineer had never said a word to anybody that he was having trouble with his engine. The trainmaster was at West Liberty, and he said nothing to him about it. There were two conductors; one of them had been in the service of the company fifteen years and the other about twenty-one years. They were in charge of that doubling-up process after the engine failed. The only thing to do was to double up and clear the main line, and any boy fifteen years old ought to have handled the arrangement and gotten the thing to moving in forty-five minutes; but they sat down there and indulged in big talk and absolutely did nothing.

Now, after that performance, they went on to the junction at Davenport, and had another delay because of the other train just ahead of that. What happened then? An engineer coming down the hill (and this is only eight-tenths of one per cent grade), with only thirty-five cars in his train, sat up there looking out over the country and let his engine drift down and run over the switch and off the track, not noticing the signal, although the flag was out there; and it took an hour and a half to put that engine back. Then when they got on down, another engine that had been delayed by that ran out of water and died before he got to Silvis.

I am very glad you think that we have a good agent, but I am afraid I will have to disagree with you just a little. When the agent tells you that the train dispatcher cuts him off, and he can't do this, that and the other, that is all tommy-rot. I have been all through the railroad gang. I started in on section, and from there went into a station as station helper, and learned telegraphing. I have been an agent and a train dispatcher; I dispatched trains for some eight or ten years. When I was an agent, I never let a train dispatcher cut me off; he couldn't get rid of me. If I wanted to know anything in taking care of the business of my station, I made him give me the information. He couldn't get rid of me by giving me a sharp answer or cutting me off; he had to tell me something before I would ever let loose of him. There is a way on the railroad, just the same as there is in your business, to get information and results. The agent can, if he is the right sort of a fellow, take care of seventy-five per cent of the troubles at his station. He can find out and know almost without question what his car supply is going to be the following day. The trouble with the majority of employes, not only in railroading but otherwise, is that they are machines; they want somebody else to do their thinking for them. If I can get a man to thinking and acting, even though he makes mistakes, I am pleased.

Mr. Eisele: Isn't it a fact that the agent doesn't know whether he is going to be furnished cars?

Mr. Whitenton: He can find out. In the first place, the man who dispatches trains doesn't have anything to do with the cars; there is a man especially assigned to that work. He knows twenty-four or forty-eight hours in advance always what he can do on the car supply, or has a very good idea. Once in a while he gets up against it; some fellow stubbed his toe and doesn't get the cars out just as he should; but he knows approximately the time, and whether he can furnish cars that have been ordered or not.

W. T. Hamilton, Wellman: I would like to know why this condition exists at Rock Island in regard to taking care of the shippers over your road to Chicago. I have been in eastern Iowa for thirty or thirty-five years, and the conditions are about the same as when I commenced shipping. You never know where you are at when you get off your train; there never is anybody to tell you where the caboose will be. There will be three or four trains to make up at Silvis, and a man doesn't know where his stock is or what caboose to get into, and they all pile on one caboose.

Mr. Whitenton: I will be perfectly frank with you, Mr. Hamilton; I don't know why the conditions in that respect are as they are at Silvis.

Charles Cessna, Grinnell: I find the conditions at Silvis about the same as already stated. At Savanna and at Clinton, on the Milwaukee and North Western, they are some better. Before you get off your train on the Iowa division at Savanna, or going from Marion to Savanna, the conductor comes around and punches your pass, and says: "This is second 62, or length 62," or whatever it might be. We all go to a certain place to eat. A brakeman comes in and says: "All men who came in on second 62" (or if the two trains double up, he says, "second 62 and 63") and the bunch follows him and gets in the car, and are with the stock nine times out of ten. At Silvis a man has no way to know what train his stock is on. We get off our trains and they are switched and doubled up, and they pull the train by and stop the caboose in front of the office, and all get on who can. Mr. Eisele and I have several times got an order to stop the passenger train at Silvis and got on it. Of course when we do that we lose our return pass.

Mr. Whitenton: I will be very glad to look into that Silvis situation.

Will Drury, Early: I would like to ask Mr. Whitenton if he couldn't take up the matter of receipts with the railroads west of Chicago, and give the shippers some line as to what they would be. Yesterday we heard from our commission man in Chicago, Mr. Walters, stating that the loss to shippers on Monday's market was $45,000, while their gain on a light run would be only $15,000. After a big run, the Drovers' Journal will send out the report that the fool stockmen flooded the market. There is no way that the stockmen can find out who are going to ship except through the railroads and if there was a bulletin out twelve hours before the shipment, they would not flood the market so. Forty thousand or sixty thousand hogs in Chicago means a tremendous loss to the stockman, and no benefit to the railroads, and the packer gets all the benefit.

Mr. Whitenton: It would be very easy, so far as we are concerned, to tell our agents, say on Friday, that the orders were about so many for Monday morning's market; and I know of no reason why other lines couldn't do the same thing.

Mr. Drury: There would have to be an understanding between the railroads to send in the reports to one headquarters. Fifty-one per cent of the stock that goes into Chicago originates in Iowa, and if the Iowa shipper had a tab on that, it wouldn't hurt the consumer any, or the railroads, and it would help the shipper.

Mr. Whitenton: I will be very glad to take that up with the other lines and see what we can work out of it.

The President: I hope you will be perfectly free to follow the suggestions that have been made, and that you will take these matters up with your local men; and if you can't reach a satisfactory conclusion, refer them to the officers of your association, and let them take them up with men like Mr. Whitenton and Mr. Hammill, who are men in authority on these railroads, and who can do something for you.

There was just one suggestion that came to my mind in connection with that complaint that Mr. Oliva presented here, and that was that where Mr. Oliva and his friend made the mistake, in my judgment, was that after those cattle were loaded and billed, they didn't turn them over to the Rock Island Railroad Company. The agent had signed the billing, and if they had simply said to him: "These cattle are in the hands of the Rock Island, and it is up to you to get them out of here or care for them," that would have been all there was to it; the agent would have got busy and done something. Two hours' work there would have put that car in condition to go on that same train, and if the responsibility had been thrown on that agent, he would have recognized it and those cattle would have been gotten out of there.

Mr. Oliva: We considered that point also, but my neighbor wanted to go when I went, and there was no possible show apparently that he could go that day; and so he decided to take the cattle home and feed them a little longer, because the market didn't suit him any too well, anyway.

The President: Our old friend, Clifford Thorne, is going to give us a talk at this time. As you know, he has been very close to this association for a great many years, and we would hardly feel that a program was filled out unless we had a word from him.

Mr. Thorne: Mr. Sykes says he has arranged for me to speak to fill out the time this morning! Last night you good folks heard about that railroad train plowing through the country, and the farmer who had the dog. The dog chased the train and barked and caused so much havoc in the vicinity that complaint was made about it, and the farmer said, "Oh, well, it is good for the dog, and it doesn't hurt the railroad any; so let him bark." Now I suppose that I am the dog. I suppose the idea is that it is good for me, and it doesn't hurt the railroads any, so let me bark! I imagine that if that is the situation, there are functions of value that I might perform. I might take the position of a sort of mediator, and I don't know but what I have been rightfully criticized, and that I should try to get you people together more than I do, if I were a broad-gauged man. But you know if that dog would try to get that farmer and the railroad train together, it might be hard on the dog. He could lick the farmer's hand, but when he tried to lick the train of cars, it might cause bruises on the dog, and I have been getting some of those bruises during the past year that I want to tell you about.

I think that this discussion today has been very instructive and very valuable. I do think that we must take a more friendly attitude toward each other and get rid of some of these unfortunate circumstances that exist. At the same time, there are circumstances where wrongs exist and they are not rectified when you go to headquarters with them, and I am here to add my complaint to Mr. Whitenton and these railroad officials, and I mean business about it. It would have been very well if I could come here in a different frame of mind, but during the past year I have had occasion to make requests of the railroad companies, and I have gone to their highest officials with them, and have been ignored absolutely. So I come back to you folks who put me where I am. If I can't get relief there, I propose to keep coming back to you folks until I am treated right in regard to those things.

A year ago you remember I told you about going up to a classification meeting. And, by the way, do you know what a classification is? I will bet a farm that there isn't a man in the audience outside of the employ of the railroad companies that can tell me. A classification is the basis of the whole rate structure in this country, outside of your commodity tariffs. Your commodity tariffs may cover the great bulk of the traffic, but there are over 7,000 articles that they classify. It would be impractical to name the rates on every one of those 7,000 articles between every two points in the United States; if you started out to do that, it would take more books than there are in the congressional library at Washington to hold the tariffs, and then you would have to have that duplicated all over the country. They distribute these 7,000 or 8,000 articles into five or ten different groups, and then name rates on those classes between points, instead of between points on each article. You can see from that explanation how fundamental a classification is; and when they scratch out the figure 2 and write the figure 1 opposite "butter, poultry and eggs," that little action automatically raises that freight rate over $300,000 a year. I went before the classification committee. I saw the shippers getting up there and stating their cause of action, one after the other, four or five minutes to each. You couldn't hear the men thirty feet away because of the buzz of fans. Sixteen men in front making the freight rates for half a continent—a greater power than any congressional committee now in operation doing its work at Washington! I said to the chairman of that committee after that hearing: "I want to hear the other side of these discussions. I don't hear any answer in discussion here. Why can't I go in and hear you people talk about these things? I want to hear the railroads' side." "No," he said; "nothing doing; you can't do that." Those questions affecting the shippers of this state were decided by the railroad companies, interested parties, in star-chamber session, without a representative of the shippers being allowed to be present, when the chairman knew that I was a member of the Iowa State Board of Railroad Commissioners and trying my level best to look after my duty when I was there. I say that is dead wrong. A little bit after that meeting, I got a book at the office showing the proposed changes, and they named about 2,000 of them. I asked our boys to check that over by evening of that day; I wanted to know whether there was a general advance or a reduction. One of them said, "I can do it by tomorrow morning." The next morning, he said it would take him three months, and then I wired different states, and they sent men to Kansas City, and we analyzed a certain portion of that, asked for a suspension, and the entire classification was suspended. Among the things that were suspended was 100 per cent advance on binding twine, and that has now been permanently suspended. There was a 50 to 100 per cent advance on silos. There were advances on minimum weights in cars. I am not fighting the proposition that you have to get good loads in cars, and as the size of cars gradually increases, the size of minimum weights ought to gradually increase as a general policy; and yet it is not fair to say, simply because it is right to gradually increase the loads, that it must be applied to everything. Let me give you one concrete illustration which does not affect you at all. There was an advance on Ferris wheels that go around to our county fairs and our street carnivals of 50 per cent on the minimum weight, because two wheels can be put in a car, although, as a matter of fact, never more than one is shipped in a car.

The carriers took the ground that in framing the minimum weights for the United States, only physical capacity of the cars should be considered, and the Interstate Commerce Commission was directly divided on that proposition. There were decisions in support of that side of the case by eminent members of the commission, but at the conclusion of our hearing the Interstate Commerce Commission ruled that commercial conditions must also be considered in framing minimum weights. In the case of the Ferris wheels, there would have been an instance of an advance of 50 per cent minimum weight that would be absolutely unreasonable. The point is that there is a fundamental proposition, nation-wide in importance, that will help determine on a fair basis your minimum weight.

Now, I asked the representatives of these railroad companies at Chicago to let me look over their records of minimum weights for a year, to find out what actual movements of articles there were. Could there be a fairer request than that? Here I am, an attorney for you people, those people had all the information in their possession. Wasn't it right, gentlemen, that I should see their records, showing the minimum weights? They let us send up a man, left him to examine the records for two or three days, and then stopped him and denied access to your chosen representative to their records of minimum weights. I say that kind of thing must never be repeated, and the next time I ask these railroad companies for information, I want them to know through Mr. Whitenton that if they don't give it to me, I am going to keep on telling the folks over this state what they are doing until they learn to come across!

During that case there were some recommendations by the uniform classification committee. I asked for a copy of those recommendations, because they were using their recommendations as a basis for the change in rates; and that was refused. The result of the case was that the commission laid down a few general principles, and the question of a practical application of those principles is now at stake. Of course it is all right to have a general principle, but it is also important to see that applied practically; I hope those will be. They made specific orders on about 100 different cases that were heard during the case.

Now that I have made these statements as to my sore spots (and I have stated them as forcibly as I could with my meager capacity, to you folks; I stated them to the railroads before, and didn't get results), I feel better; I have got it out of my system! And I will say on the other side of this story that we have lots of complaints come into our office that are absolutely groundless, and lots of complaints that have a good foundation; and I will say that when I go to consult with these railroad officials in the city of Des Moines, I have, without any exception, received the finest kind of treatment. One of the broadest-gauged, biggest men in the whole railroad service in this country that I know of or have had any dealings with sits right here in your presence—Mr. Whitenton; and I am in hopes that as a result of his presence in this state, a healthier and better relationship will be created between us and the carriers.

Last night considerable was said about our interest being mutual, and that there was no reason why we couldn't waive all differences. There is a great deal of truth in that, especially as to service. Service is one of the most important things that you have to deal with, and one of the hardest things for us to deal with. When an employe of a railroad company violates orders or makes a mistake, it is hard for me to say how a state commission can devise an order that will compel that employe to do his duty. We will try to help solve these problems, but while we are trying to do that, please remember that the carrier is equally earnest and solicitous in solving the same problems that we are trying to solve, and it is only where we would have better judgment than he that we would succeed; and you know that he, with his years of experience in dealing with those problems, is more liable to solve a service question than a railroad commissioner is because he is just as anxious as the railroad commissioner is, to secure that reasonable service. At the same time, we are trying now, and will continue to try with all of our might and main, to remedy these conditions, because I know what a bad service means, and I know how that becomes more important to any given shipper than the rates on that particular haul.

But there is another phase of those questions where our interests are not in common, and there is no use trying to evade the point, because it does exist. Judge McPherson said yesterday, according to the papers, that we ought to quit fighting for better rates; that it is a matter of service solely, or chiefly, that you are interested in; that the rates are not unreasonable. That brings up the other side of that problem. If you are making cattle and hogs, you want to make a good quality of cattle and hogs; it is to your own and the consumer's interest that you should. In that respect, your interests and the consumer's are exactly the same. But when it comes to paying for those cattle and hogs, your interests and the consumer's are directly opposed to each other, and there is no use trying to beat around the bush. It is to the interests of the carriers to do this service well, and to get as much as they reasonably can out of it, so that it doesn't hurt business generally. It may seem to you that I have given too much attention to interstate matters, but when I call your attention to the statement of Mr Davis last night, that over 90 per cent of the business is interstate, you can perhaps see the reason why a great deal of attention ought to be given to interstate matters. As to interstate matters, I am not a judge, but a prosecutor, and therefore I may take the attitude of an advocate as to interstate matters. I will co-operate with Mr. Whitenton and Mr. Davis and these other railroad men any day to make it impossible for the railroad commission to be both prosecutor and judge. It is a bad combination; it unconsciously biases the judgment of a man. If we are continually lawing with each other in court, neither one of us would like to see the other side on the bench in a case where the other's interests were involved. I am perfectly willing to change that, but so long as the law remains as it is today, I feel it is my duty to attend to that 90 per cent of the business, until the commerce counsel department gets thoroughly developed. When that day comes—and it ought to come shortly—I think the commerce counsel should attend to all interstate matters, and the state commission be relieved of those duties. At the present moment, anybody who tells you that our interstate rates are right is not telling you the truth. You people are anxious to build up Iowa, aren't you? You are not just raising cattle and hogs; you want to see cities develop here and factories come to this state; and one of the finest things about the Corn Belt Association is the fact that you do discuss these big, broad questions. One essential to the building up of factories in this state is an equitable adjustment of freight rates.

I was down here at Keokuk, trying a case before the Interstate Commerce Commission the other day, and I had Mr. Hugh L. Cooper on the stand. Mr. Cooper has built more water power than any other three men on the face of the earth. He would certainly estimate to its full the importance of cheap water power. But listen to his testimony: He said that he had made careful estimates of the cost of power on a representative commodity. The commodity he took was flour; and he swore that it cost approximately one and two-thirds cents a hundred pounds to make flour, so far as the power is concerned. The difference in freight rates between Quincy and St. Louis in first-class traffic from the Atlantic coast is 9 cents down to 4 cents for the lower classes, while the power only costs one and two-thirds cents a hundred pounds. That is representative of the rate on thousands of articles. In other words, if you wanted to build a factory, and were considering going to Keokuk or to Quincy, thirty-one miles down the river, if Keokuk offered to give you the power free of charge as long as you are in business, it would pay you to go to Quincy instead of Keokuk, because of the freight rates. Of course there are other factors than power and freight rates involved in our manufacturing and jobbing business, but I have found in my short life that there isn't very much difference between our human morals in the long run. You will never be able to build up factories in Iowa as Chicago and St. Louis have—you will never get a Chicago or a St. Louis in Iowa—until you are on a parity with Chicago and St. Louis.

There was a statement made last night about the development of this country. That is a very interesting proposition to me. You know we are closer to the center of population and to the center of production than those states and cities in the east, and I do truly expect to see the day come when this will be the industrial center of the United States. The center of population is just over here in Illinois or Indiana, close to the Mississippi river. The manufacturers in the east are looking for locations out here in the west. They know that if they don't come out here to this section of the country, their competitors will, or some other competitors will grow up here and take the business. They are coming here, and the question is, where will they come to? Will they come to Chicago and vicinity, St. Louis and vicinity, or will they come into Iowa? Already, the far-sighted financiers of the country realize the strategic importance of locating in this part of America. Where did the steel trust locate their great plant? At Gary, Indiana, close to Chicago. Where did the Standard Oil Company build its great new plant? At Whiting, Indiana, close to Chicago. The Sugar Creek Refinery is just out of Kansas City. The greatest milling houses in the country are at Minneapolis. The greatest production of live stock is down south; corn up here; wheat and oats right through this section. Those two greatest financial concerns in the country, fully appreciating that fact, have come out here in the heart of the United States, close to the Mississippi valley, and it is only a question of time till where you and I now are will be the industrial center of the United States. If we can only get on an equality with these rival cities, we can have a few cities within the state of Iowa. The regulation of these things is necessary.

I think the work that we have been doing in regard to railroads is just pioneering in regard to other business. Today you have over at the state house pending measures providing for the regulation of public utilities. There is just one phase of that that somewhat embarasses me. Mr. Erickson, of Wisconsin, says that he devotes 75 per cent of his time to the public utilities, and the balance to the railroads. Mr. Lee, of the Washington railroad commission, said that he didn't have any time at all to give to the railroads since they had the public utility law in Washington. It will be rather sad if I have to devote all of my time, or four-fifths of it, to the public utilities—wouldn't you think so, Mr. Whitenton? But the time is coming, I sincerely hope, that Iowa will not find it necessary to copy after Wisconsin or any other state. We have been late in securing public utility regulation in this country, but we can profit by the experience of other states. We can get some good ideas from the Johnson (California) law, and the Hughes (New York) law, and the La Follette law in Wisconsin, and the Oklahoma, Ohio and Virginia laws. We can take the best results of their experience in regard to these matters and incorporate them in a great Iowa public utility law, which I think will be done. There are other lines of big business going to be regulated. Recently a man very prominent in one of our political parties said at Chicago that monopolies are going to pass out of existence, and that the business men of this country must make up their minds to that fact. Do you really think that is true? Take it in your home town, do you want one telephone company, or three or four? Isn't it better for you to have just one telephone company, if that one is charging reasonable rates? You don't want two or three or half a dozen receivers in your house in order to be able to talk to your neighbors and friends. The same is true about your water works and gas works. You don't want a number of rival concerns to make competition more costly and make the employment of additional help necessary to give you the service that one set of men would give you if there was only one company there. If you live in a town which a couple of railroads to Chicago, do you want half a dozen more, making the cost pile up which they have to pay, and increasing the value upon which they have to pay a return? You don't want that situation, and we don't want any settled rate wars; we want a reasonable cost. We don't want service below cost, but we want to give them a reasonable return, therefore let them combine, and then we attempt to regulate them after they have combined. This thing of busting the combinations is hard to carry through. A few years ago, they busted the Standard Oil Company in Ohio, and drove it out of the state; it has been there ever since. They drove it out of Texas; but it is there yet. Hadley, down here, made a national reputation driving the Standard Oil Company out of Missouri, and yet she is there just as much today as she ever was. Last year the attorney general busted the Standard Oil Company, dissolved it, and drove it out of existence in the United States of America; and yet the Standard Oil Company has been here ever since, and her stock sold a hundred million dollars higher on the market the week after she was busted. It may be possible to destroy these combinations or create effective competition but by our past experience I should judge that it is going to take considerable time to perform that task; and while that time is going by, if I mistake not, you people and other folks over this country are going to demand that we shall have regulation of all big business; and I suggest to your minds one principle that shall guide in that kind of legislation. I suggest to you that whenever a business becomes dominated by a monopoly, just that soon it shall be regulated, and the prices it charges shall be regulated. Somebody said to me, when I suggested that principle to him: "I suppose you would have them trying to regulate the price of potatoes in Bird'seye, Iowa, and Houston, Texas, and Blue Grass, Nebraska?" Well, I will tell you that if the day ever comes when a small group of men can get together, like that Western Classification Committee that I told you about, in a room in Chicago, and can fix the price on potatoes in Bird'seye, Iowa, and Houston, Texas, and Blue Grass, Nebraska, and every other town and village in the western half of the United States, I will say, just that instant we must have regulation of the price of potatoes. I don't think it will ever be possible for that day to come. I don't think the farmers of the country can ever get together and agree as to the price of grain and live stock, because you will always have competition in the production of these necessaries of life, and because it only takes a small investment to produce them. Anybody can go into business and become a competitor; but it takes quite a little investment nowadays to produce an investment to compete with the Standard Oil Company.

I don't want to leave the impression on your minds that this is going to be a continual fight as far as I am concerned. Mr. Whitenton said he wasn't a fighter. I am in hopes that the day will come when we can all sit down in peace and quiet, love and charity. And in regard to these big problems, I think while here and there there are abuses, yet I believe we are getting closer together. I know it is not my ambition at all to hurt capital. I want to see capital have an adequate return, and it is return that the companies want. They are not giving this service out of philanthropy; it is the rates that they are after; it is their revenue they want to protect; and I am perfectly willing and anxious that it shall be protected and that capital shall have an abundant return; because when you prevent these railroad companies from getting a reasonable return, it means that they can not get capital to build better cars, better roadbeds, better engines; and it is up to us to see that they shall have abundance, in order to make their investments attractive so that they can get the capital to give us better facilities that we are demanding of them. And then, do you know, I think after this commerce counsel department is thoroughly developed and has abundance of employes provided by the state, and after I am not prosecuting cases any more, Mr. Whitenton, but just hear people try cases before me, I sort of believe that I will quiet down and get peaceable-like. I have thought, too, that there was a certain salve that you might rub on my sore spots and relieve the situation a little. I don't know whether you have heard about the great American salve or not. I told these gentlemen about it once, a long time ago, and I am going to tell it again, so that you can hear it.

There was a man peddling out in the country down south one day, and he leaned up against the fence and called to a farmer who was working in the field to come up. The farmer came up, and the peddler said: "I have some American salve that I would like to sell you—a splendid article—wonderful power. You see that dog that you have over there? If that dog should happen to get his tail cut off some time, you could just rub a little bit of this salve on the tail where the dog came off, and on the dog where the tail came off, and the two would grow together all right." "Oh," said the farmer, "that ain't nothin'. You see that other dog over there? One time I took that dog to the city and a street car ran over his tail, and I picked up the dog and the little tail and took them home, and I rubbed a little home-made salve on the tail where the dog came off, and on the dog where the tail came off, and a new dog grew out on the tail and a new tail grew out on the dog, and I had two dogs; and before I got out of town they arrested me for retailing dogs without a license." If the railroads were to rub some of that salve on me, maybe that would help out!

The convention thereupon adjourned to 1:30 p. m.

AFTERNOON SESSION.

Mr. Will Drury submitted to the members present the suggestion that an arrangement might be made with the railroads by which berth cars could be furnished stockmen from the Missouri river to Chicago at the rate of 50 cents per hundred miles. The sentiment of the members was practically unanimous in favor of such an arrangement.

The President: We will now listen to an address by Mr. T. W. Tomlinson, secretary of the American National Live Stock Association, whose home is in Denver, Colorado.

Mr. Tomlinson: Mr. President and Gentlemen—I will not tire you by talking of the work of our national association, but will touch on some of the important questions. One which is now confronting us and you is the tariff question. You will recall that at the last session of congress, the democrats, for political purposes only, passed what is called the free list. That followed the failure of the Canadian reciprocity treaty, which was to admit from Canada cattle and all grain products free, and made a slight reduction in the duty on meats and flour. Our association opposed the Canadian reciprocity treaty more as a matter of principle than on account of the effect it might have on live stock values in this country. However, we then contended—and still contend—that the free importation of cattle would have an appreciable effect on live stock prices in this country. If you followed the discussion of that matter closely in the papers, you will probably recall that the proposers of that treaty—President Taft at the head of them—insisted that live stock was higher in Canada than in the United States, and that the free interchange would result in great benefit to this country, because we could sell our live stock in Canada at a higher price than we could get in this country. During the past year, probably 20,000 cattle have come from Canada to the Chicago market. Those paid a duty of $25 a head. That is the best evidence that cattle are not higher in Canada than in the United States. We opposed the treaty as a matter of principle. It was the opening wedge. If we could see that cattle could be brought in free from Canada, we had no ground to stand on for opposing the entry of free cattle from Mexico; neither did we have any ground for opposing the free meat proposition.

The free list proposition which is pending before the ways and means committee in Washington provides for free entry of meats, grain and grain products, practically all the products of the farm. It takes off the duty on some agricultural implements, puts boots and shoes on the free list, some kinds of lumber, and certain kinds of leather. You would surrender about 100 per cent and get back two and a half or five per cent. It is a bill absolutely against the interests of the stockman and the farmer. It takes away from you every scintilla of protection or benefit that now inures to you by reason of the present duty on your products.

This tax question (because the tariff is in reality an indirect tax) is as old as history. It has disturbed all nations at all times. You remember the Boston Tea Party. I heard a man this morning talk about the increased tax on his land in Iowa. The tax matter is always one of great dispute, and the tariff is probably the most disputed item in all our government affairs. If there was any possibility of this country going onto a free trade basis, we might complacently view the putting of our products on the free list; but free trade is an irridescent term. It takes a vast amount of money, about three-quarters of a billion dollars annually, to support this government, and we raise by import duties on the products coming into this country close to $350,000,000 annually; the balance comes from the internal revenue taxes on liquors and tobacco, and a small proportion comes from taxes on corporations and from miscellaneous sources. When the income tax comes in, that may contribute about $100,000,000 more; but I suppose about the time we get that income tax in, our expenses will increase sufficiently to eat that up. Unless some other sensible and less burdensome method of raising $350,000,000 is devised, we must perforce pursue the same plan of raising that vast amount of money to support the government. Congress does not propose to put these items that pay heavy duties on the free list; they will select only those on which the revenue is possibly inappreciable. No one is talking about putting live cattle on the free list, simply because live cattle pay a duty coming into this country in a very appreciable amount. We are importing from Mexico close to 250,000 cattle annually (not so many right now, on account of the internal dissension), which will pay at least $3.75 a head. There is an item of revenue which the government needs, and which the ways and means committee is not going to overlook. They are tempted, of course, to reduce and put on the free list those articles which do not yield to the government very much revenue, and at present meats, grain and grain products do not yield very much. However, we stand for principle. If there be any benefit coming from the imposition of any kind of duties (and you must concede that there is a benefit arising from an import duty on articles which you produce in this country), we want that benefit or favor distributed equitably. We don't want the farmer to stand all the burden and the manufacturer to reap all the benefits. Take the Mexican cattle situation: the contracts covering those cattle provide that in the event the duty is removed, the price to the seller in Mexico will be increased by the amount of the duty. Therefore this country would not get any cheaper cattle from Mexico; neither would they from Canada. You would simply pay the present prevailing price, and the benefit would be transferred from this country to Mexico or Canada.

There is a great diversity of opinion as to whether the free importation of meats would have a very marked effect on live stock prices in this country. Uncle Henry Wallace voiced a very general sentiment last night when he said it would be disastrous to the live stock interests of this country. I agree with him entirely in what he said, under normal conditions. Possibly today, with extraordinary world conditions and shortage all over the world, the effect of the free importation of meat might not be so great as some would have us believe. Still the moment conditions get back to normal, and you have all you want in this country and a little to export, and they bring in a few shiploads from South America, it will have a pronounced effect on prices all over this country. Now, congress ought not to legislate to meet the present abnormal conditions; it ought to be broad and big enough to view the conditions that may arise in the next two or three decades. Under the stimulus of the present profitable prices, there is no doubt in my mind, and there should not be in yours, that the live stock production of this country will rapidly resume its former condition, when we had plenty for ourselves and some for export. Of course we have plenty of hogs for export, and we export $100,000,000 worth of hog products annually. We raise about 80 per cent of the corn crop of the world, and have vastly more hogs than any other nation in the world. We will never cut much figure in the exportation of sheep, because we can't compete with Australasia.

There was a hearing in Washington on the matter of import duties on agricultural products and live stock, known in tariff parlance as "Schedule G." Our association arranged to be represented down there, and our Mr. Cowan went there with the resolutions of our Phoenix meeting, and presented them to this committee in the form of a brief, which I will be very glad to send to anyone interested. It is a compendium of all useful and interesting information on the question of live stock conditions in this country and abroad, and the possible effect of the tariff.

When I came through Kansas City on Monday, I stopped off to find out the status of a suit which had been won against fourteen members of the Traders' Exchange, involving the fate of the ill-fated Co-operative Commission Company, with which I suppose a good many of you are familiar. That judgment is now in the supreme court of Missouri; it has been there for a couple of years. The judgment now amounts to close to

$70,000. The supreme court of Missouri will undoubtedly hand down its decision, if not this spring, certainly next fall. I have every confidence that it will be in our favor. While we were not entirely successful in running a co-operative commission company (and I say "we" because you had as much to do with it, I think, as I did) we were successful in a good many ways; we had our victories as well as our defeats. When the Co-operative Commission Company started its existence, there were numerous decisions of federal and state courts to the effect that all these live stock exchanges were highly beneficent associations. Even the Traders' Exchange got a decision to the effect that it was a very laudable combination of enterprising business men. When we commenced to meet with our troubles at Kansas City, one of the duties devolving upon me was to start a few law suits. I prevailed upon the attorney general and governor of Kansas to interest themselves on behalf of the Kansas shippers, and they had a long-drawn-out lawsuit involving taking testimony for about seventy-five days. When the case was finally decided, a permanent injunction was given against any boycott on the Kansas City yards, so far as the Traders' Exchange was concerned. By the way, the state of Kansas spent about $15,000 in that suit.

Inasmuch as the Traders' Exchange boarded over in the state of Missouri, we thought it best to do a little work on the Missouri side as well, and we interested Governor Hadley, also Attorney General Major (now governor), and they took it up. Attorney General Major filed that suit, used our attorneys in the case, and got a very sweeping victory. The Traders' Exchange is practically out of existence on the Kansas City market; there are about as many independent traders as members of the exchange. I am informed that anybody can go in there and buy live stock from the commission men without any trouble. We have won so far four different cases against these combinations in and around the Kansas City market on both the Kansas and Missouri sides, and if another co-operative commission ever sees fit to start, as I presume will be done in the future, it can successfully operate on some of these markets—although I probably will not be connected with it.

You probably are acquainted with the advance of commission charges at these various markets. I am not one who thinks that the commission firms are getting over-rich at the present charges; in fact, I think their net results are not any more than reasonable. The trouble is that there are too many commission firms in business; you all know that as well as I do. Of course they can't regulate that; they would probably be a trust themselves if they tried to limit the number of commission men operating at any particular point. However, I am satisfied that if there were about a third the number of commission firms, they could make a whole lot more money, even at the charges prevailing before the advance. I have no antagonism to any of these commission firms; I number them among my best friends, as well as the railroad men; at the same time, it is a business proposition with them, and it ought to be with you. I have been following up this matter down in Missouri quite a little; I take a keen interest in everything that affects the interest of the live stock men, no matter where it occurs. I have had quite a little correspondence with some of the legislators in Missouri, and they have evolved a scheme down there to have a live stock commissioner who is to have jurisdiction over the stockyards and all the charges of the affiliated concerns in those markets. A very strong delegation of Kansas City commission firms went down to try to beat it, but it will probably be pretty difficult to oppose the creation of an independent bureau of that kind to investigate and regulate such charges. I suggest that this great state of Iowa ought to take some action regarding the stock yards within your own borders, and perhaps then you can get the Illinois people to do the same thing. It is the only way you can correct these continual advances of commission charges. You have got to organize and be prepared to beat these combinations, and if you can beat them through the means of proper laws, so much the better.

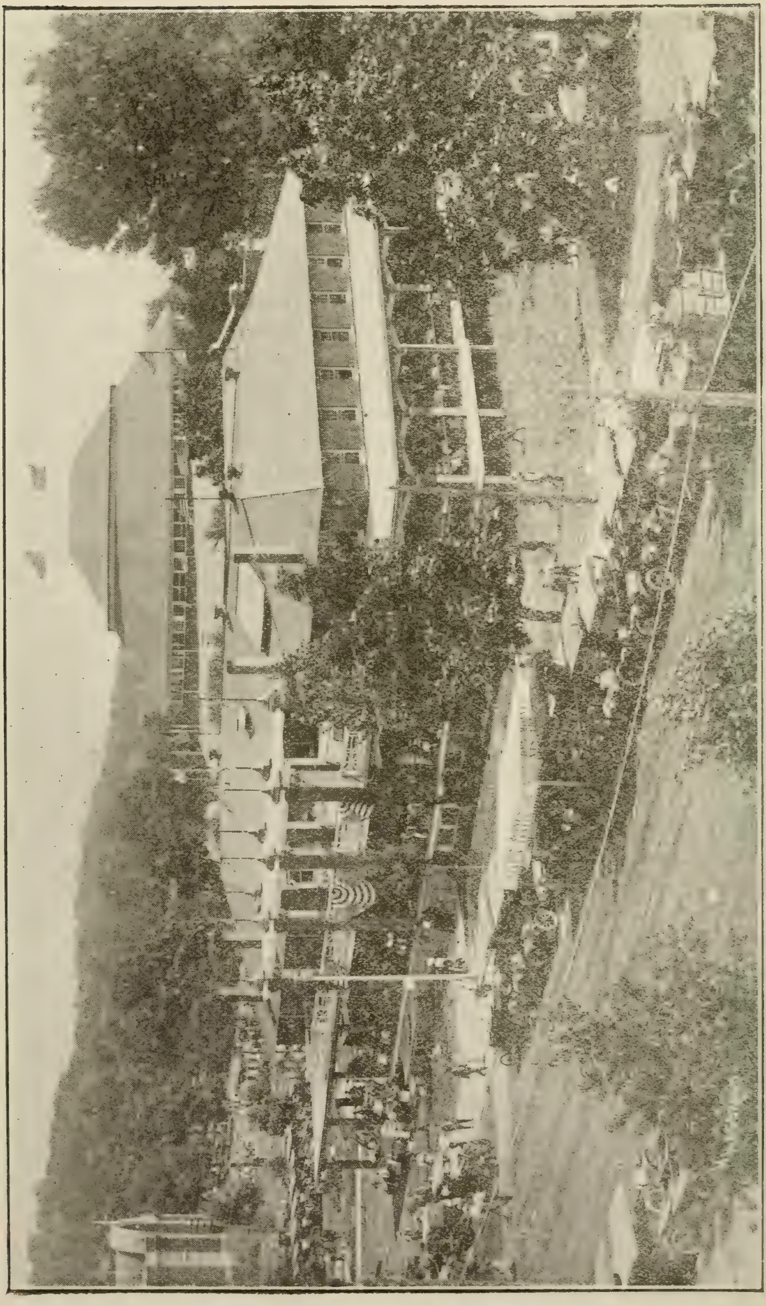
I want to refer to western land conditions, which I think ought to be of as much interest to you as it is to us western people. You get your best live stock, so they tell me, from the western range. You know the ranges have been cut up; possibly you also know that the high prices the past few years have resulted in a great many of these range men cleaning up. Since they have done that, they have never had a chance to get back in, and a good many don't want to go back under the old free range conditions, where the grass belongs to everybody, and nobody protects. Those of you who have traveled in the west know very well that the semi-arid country there is not like Iowa; it is never going to be settled up in prosperous farms. Possibly there may be some successful dry farming done. One of the potent factors contributing to this decrease in live stock in the west is the very unsatisfactory range conditions. Our association has been trying for years to get some kind of federal control of the open range similar to the supervision that runs on the forest reserve system, whereby a man can lease and fence and prove and watch his land, and thereby increase the production of a specified amount of land. It has been estimated by well-informed range men that the open range could produce fifty per cent more live stock of all kinds under the lease law than at present. You have as much interest in that land as Colorado or Wyoming has; you are interested in all the national resources, for Iowa helped pay for this public land, as well as other western states; and I hope you will pass some resolutions along that line. This, I am sure, will contribute to increase the production of live stock, and tend to avoid the necessity for putting meats on the free list.

Last summer I was in Washington on a good many matters, and happened to be down there at the time this free feeder rate case was being tried. I was the only live stock man before the Interstate Commerce Commission on that very important matter At the same time an attack was being made on the meat inspection by some wild-haired man who claimed the government was permitting a lot of impure meats to be sold. Our association looked after that very creditably, because the bill never got out of the committee. There are hundreds of things of that character which our organization looks after. I personally try a great many rate cases involving western railroad rates. Our organization stands for a great many matters which it is not necessary to discuss, but in any of which I am sure you are interested.

The American National Live Stock Association has a large individual membership. We comprise in our membership all the important live stock organizations of the west, numbering something over seventy-five. We get our great strength from these different organizations. We have only two individual members in Iowa. I have not come down here for the purpose of importuning you to join our association as individual members, although I should like very much to see you do so. As a matter of fact, I never appeal to anyone to join our association, because there are enough public-spirited men throughout the United States to support it, and we find we are growing in strength year by year. The Corn Belt Meat Producers' Association has been a member for seven or eight years, and we have valued your membership very highly. As a matter of fact, I have spoken of your association with a great deal of pride in various state meetings, and I am not flattering you when I say that you have the best and strongest organization of its kind in this country. It is a great credit to the men who organized and have carried it on.

I must say frankly to you, however, that the support you have given us—at least financially—has not amounted to very much. Before I left my office in Denver, I made a memorandum as to what the Corn Belt Meat Producers' Association had paid us. You continued in pretty good membership as a paying member until 1908; since then you paid nothing until December of last year, and then for some reason you sent us $25. This is a pretty meager contribution for an organization of your prominence to make to a national association. I think if I was a member of the Corn Belt Meat Producers' Association, I would feel rather ashamed of that record. If our organization is worth anything to you, and you feel that you wish to be continued as a member, I think we are entitled to much more liberal support. We don't allow any organization to come in for less than $50 annual dues, and I don't think we have any organizations of any consequence on our books that pay less than $100, and they run from that up to $1,500 annually. The Texas association pays us $1,500, the Wyoming association $750, the Arizona association $500. The Montana association has been paying us $600.

With this statement I am going to thank you for your kind attention, and express the hope that when our national association meets again next year in Denver, some of you will come out and have Iowa represented. I forgot to mention that at none of our last few annual meetings has anyone represented your association. You can't make a national association very strong unless some of you take a little interest in it. If you think you are big enough to get along yourselves, that is your business; I am not urging you to come in; but if you want to avail yourselves of our services and help your fellow stockmen everywhere, come in and help us do it.



View of Administration Building, Iowa State Fair Grounds.

PART V

PROCEEDINGS

OF THE

Annual Meeting of the State Farmers' Institute, House Chamber, State House, Des Moines, Iowa, Tuesday, December 10, 1912

The meeting was called to order at 1:30 p. m. by Mr. C. E. Cameron, President of the State Board of Agriculture. In opening the meeting President Cameron said:

I am sorry that our crowd is so limited today. Heretofore it has been customary for us to meet with the Corn Belt Meat Producers Association of Iowa, and hold a joint session. At the last moment, the Meat Producers Association decided not to hold their meeting at this time, but later in the new year, and we have a counter attraction in the District County Fair Association.

Now, I have prepared a program and it gives me pleasure, gentlemen, to introduce to you this afternoon, as the first speaker, Mr. Thomas H. MacDonald, who will speak to you on "Iowa Roads and Their Future Improvements."

Professor MacDonald: I did not expect to deliver this talk in the presence of such a distinguished company this afternoon.

You all can impersonate the men that will be sitting in your places a few weeks from now, and I hope that the men who do occupy these places will give us favorable consideration of some of the important matters of road improvement, as I believe they will. Before beginning the paper that I have prepared for this afternoon, I want to call your attention to the road convention that we will have next week in Des Moines. This convention, while it is a delegate convention, made necessary by the experience of a few years ago, all of the presidents and secretaries of county institutes are delegates thereto, and it is our hope to bring together in convention the men over the state from each county who are the most interested in road improvements. We have prepared really three programs. First, is one we call our suggestions for legislative program, and that is a program in which different lines of legislation will be taken up and discussed briefly by several men on each topic, and then thrown open for discussion by all the delegates. It is our idea not to make a set program, but to have a full and free discussion as near as possible by all of the delegates. In the evening, we have what we call our educational program. At this program we take up the work of road building, as it has been carried on in various parts of the United States, and I believe at this meeting we will have some of the best educational features along road improvement lines that have ever been shown in this city. Through the courtesy of the Portland Cement Company we have a series of moving pictures which will be shown that evening, taken to show the construction of concrete roads in various parts of the United States, especially of Wayne county, Michigan, which is the banner county of the middle west so far as ways is concerned. Through the courtesy of the Brick Manufacturers Association, we will have a series of views showing brick construction, and another showing dirt moving machinery in operation, and these we call our educational program. It has its feature of advertising, of course, but it is this advertising feature that is the best educational matter that can be procured along these lines. The third program is to be reports from all the organized state roads. That is all the organized roads, including the trans-state roads, and the shorter lines over the state, and we hope to have full reports from nearly all of the roads. I hope that as many of you as possible may attend this meeting and take part in the discussions. The topic I was assigned this afternoon is "Iowa Roads and Their Future Improvements."

The road problem in Iowa is primarily an educational one. Sentiment has been aroused to a point far exceeding any thoughts of those who have been closely in touch with the road work. This sentiment I believe is sound, the foundation is good, and the outlook for the right kind of legislation is bright, but this sentiment, in its present healthy condition, will exist in that condition just as long as the best interests of the state are conserved in road legislation that is passed, or in any other steps that are taken to promote better highways. Iowa, as a state, occupies at present a middle ground. The states which have taken the most advanced position, as states, are those of the far east, such as Massachusetts, Connecticut, New York, New Jersey, and of the far west, such as California and Washington. These states have entered into road building as an important function of the state government, and have appropriated large sums of money to carry on this work. New York startled the world a few years ago by issuing fifty million dollars worth of bonds to aid road building. Almost before our wonder at this radical measure had ceased, a second issue for the same amount was passed at the recent election.

The other extreme is illustrated by the states which, as states, have taken absolutely no part in road work, evidently regarding it purely a function of the township and county governments.

In the middle position are the states which have extended aid of an engineering and advisory nature, but which have appropriated no money for actual construction work. Iowa was one of the first states to begin work of this character. The present highway commission was established in 1904 as a department of the Iowa State College. Other states which started under this plan later have by a more liberal policy extended the activity and usefulness of their commissions much beyond that of our own state. A conspicuous example of this class is Illinois. The first appropriation for the highway commission in Iowa was $3,500. The first appropriation for the highway commission of Illinois was $50,000. This year the appropriation for the Iowa commission has increased to $10,000, the appropriation in Illinois has increased to $100,000. The state commission of Minnesota has $150,000 for engineering alone; that of Wisconsin $350,000 annually to be used for road and bridge construction and $40,000 for engineering expenses.

It will be seen from the above that there are three positions which different states have taken, Iowa holding the position between the states now doing the most and those doing the least toward road improvement. It will also be seen that she is fast losing the company of such states as Illinois, Wisconsin and Michigan and that to hold a place of equal rank with these sister states a considerably better appropriation must be made for state road work by the forthcoming general assembly. A study of road conditions as they exist shows that the recent tendency in the United States has been toward a more centralized form of control. From the time the system of state aid was first introduced by New Jersey in about 1891, state after state has adopted this principle either through direct financial assistance or at least through engineering aid. It is not always easy to see by what process of reasoning various states have adopted the policy now extent. For instance, New York has issued a total of $100,000,000 worth of bonds. To date about $50,000,000 have been spent.

There are very few, if any, materials for road surfaces now in use that will last fifty years or even nearly fifty years. This means that before the bonds are taken up, part of the roads, at least, paid for out of the proceeds of the bonds will have been destroyed. This is a condition that is already causing concern, and it would seem to be an unwise policy for any state to issue long lived bonds for short lived roads. There are some items for which bonds might be issued profitably. If a road is re-located, a steep grade reduced, adequate drainage provided of permanent character,—such items might be added to the permanent value of a road, but if a road surface is built which within the first year of its life requires maintenance and which each year following, requires larger sums to be spent upon it then the investment is a questionable one. Including the automobile tax, the road fund will this year amount to more than seven million dollars and will probably never again be as low as this, but rather will increase. If this amount of money can be wisely and judicially expended, far greater results can be shown than for any time in the past.

In my judgment, long time bond issues should not be even considered. At the present time even short time bonds should not be issued by the state. The seven million dollars, however, is raised by local taxing authority; that is with the exception of the automobile tax this sum is raised by township and county taxes. Any attempt by the state to direct the expenditure of this money at once meets with the most violent opposition from those in control of these funds at present. This opposition comes partly from the time honored objection that such control destroys and does not accord with democratic principles of government, but it comes more because these objections are fostered by those whose own interests would suffer from a careful system of expenditure of this money.

So far as the bridges are concerned, the state can conscientiously prescribe the kind and strength of bridges that must be built by the counties and insist upon state authority passing upon the plans and construction of these bridges regardless of whether the revenue comes from state or local funds. This policy can be justified from the standpoint of public safety and public convenience. The startling disclosures in Polk county of the unbusinesslike methods of spending bridge money running up into the hundreds of thousands of dollars and the yet more recent recovery by the state and county authorities, of $20,000, which Clinton county had actually paid out for bridge work not received, are facts which cry aloud to the state to make adequate provision for proper regulation of bridge construction.

In my judgment after having investigated personally the situation from both Polk and Clinton counties, as well as in a number of other counties, where conditions practically as bad have existed, the officials and contractors concerned are not so much to blame as the system, or rather the lack of system, which the state has prescribed. It seems to me a lasting shame to the fair name of Iowa that about two and one half millions of dollars are spent for bridge construction annually without a single law to guarantee to the tax payer adequate return for his money or to the traveler adequate safety in passing over the structures built. The strongest influence brought to bear two years ago on road legislation was by and through the bridge lobby. It remains to be seen if such a performance can be safely repeated this year. So far as roads are concerned the state may through the principle of state aid treat the problem from the educational standpoint and also conserve the principles of local government. The Wisconsin plan, adopted in 1911, by which a policy of state aid has been extended to the local communities under which the county, township and state co-operate in paying the cost, with general supervision by the state highway commission, administered in a liberal and fair minded way, is meeting with an extremely favorable reception there and a plan similar to this would doubtless work well in this state.

There is this obstacle, however, to be overcome in Iowa, the comparative meager distribution of road material. Road material of a suitable nature is not widely distributed in this state and construction will be limited largely to one of three classes of road; first, earth roads; second, gravel roads; and third, concrete or brick roads. It is not necessary to dwell upon the details involved. Generally speaking, macadamized roads will never become widely useful in our state. Thus the availability of material will determine that for the present at least one of the three types above mentioned must be used.

For the building of earth roads the Poweshiek county plan of building roads under county management has by the practical success of its four years operation demonstrated that the county should undertake the building and maintenance of the main traveled county roads, the more local roads being left to the care of the township.

For the building of the more permanent types, beginning with the least expensive of these, the gravel road, the state should pay a portion of the cost and provide engineering aid and supervision. When the first appropriation for road building is made, an appropriation should also be made for road maintenance so that Iowa may not need to repeat the experience that other states have suffered in having high class roads rapidly deteriorate through lack of any money for their repair. Such a plan would require in each county a capable county superintendent of roads who should be an experienced engineer, and would require his co-operation with the highway commission with its powers extended and with considerable larger appropriations. It has been urged as an objection to the county engineer that the cost would be too great. In my judgment, it is only necessary, to point to Clinton county to show that an engineer could have been maintained for a period of ten years at $2,000 per year at a cost not greater than the amount which admittedly would have been lost to that county had not conditions been discovered, and for this one county in which recovery has been made of money for which value had not been received there are many others where such conditions will never be brought to light. Such conditions are conclusive evidence of the desirability and economy of capable engineering supervision.

There is one other field in which the state should take an advanced stand, that one being purely an educational one. We are now about to spend larger sums than ever before upon road improvement especially upon permanent road improvement and the state should build as many demonstration roads as possible. In my judgment no more favorable location for some of these roads could be found than the state fair grounds. By building on these grounds stretches of different types of permanent roads, the state would overcome a serious condition which now exists there, especially during hot, dry weather, and would afford an object lesson to thousands of interested citizens from every part of the state. For building these roads, the highway commission would gladly furnish engineering supervision and most of the machinery necessary. We have already taken up the matter with some of the cement companies who have pledged themselves to aid liberally in the construction of concrete roads. Other material companies will be glad to donate or furnish at a low cost the particular type of road material manufactured by them. Thus at a very comparative low cost the state would increase the value of its own property, improve the fair grounds to a remarkable extent, and enable the state fair to carry out in a broad degree its function as an educational institution to the people of the state. So far as the commission is concerned we will co-operate heartily in an effort along this line, to the end that before the next state fair is held there will be valuable object lessons in permanent road building on these grounds.

There may be men who would take issue with the statement that the state is about to begin with the building of permanent roads. The main work done for the last ten years was done along the line of dirt road improvement. I find where the earth roads have been brought up to the highest standard as a rule, they are beginning to talk about a more permanent type of road. I do not know how soon this may come, but I do not believe from observations taken all over the state that it will be a long time before a beginning is made along the line of permanent construction. I hope when it comes it will come along safe and sane lines and will not involve the issuing, at least to begin with, of long time bond issues for short time roads, which in my judgment some of the states of the east have done.

The Chairman: If there is any question anyone wishes to ask Mr. MacDonald I know he will be pleased to answer them.

Mr. J. E. Mershon: It has been suggested by a local organization here that a good plan to begin our road work in Iowa is to have the state appropriate money for the highway commission that may be used to offer prizes to be given to localities or to counties for the construction of roads that may be approved in its methods of construction by the highway commission, and I would like to ask Prof. MacDonald if he knows if such plans have been successfully carried out in other states.

Prof. MacDonald: I will answer that question by saying that the only work that is attracting the attention of the country at large is that which has been done under the plan mentioned by you of the state aiding the local communities with machines, as prizes, which is along the line you mention. For different classes of roads they offer certain rewards, and all of the states of the east who are taking up the work at all have adopted this principle of state aid, and we have it now in the middle west—Wisconsin, Minnesota, Michigan—these are the nearest states. We have the same principle in our road work, and it is unquestionably a very favorable way in which to begin work of this character.

Mr. Henry Wallace: I would like to ask Mr. MacDonald if he has any information as to the annual cost of keeping up macadamized roads—annual upkeep?

Mr. MacDonald: Mr. Chairman—Mr. Wallace is a long-time friend of this macadam proposition, and if he had been here sooner he would have heard my statement that macadam, I did not think, would be of use on account of the expense of maintaining these roads, and in my judgment the upkeep of macadamized roads is too great to consider it as a permanent type of road except in some localities where they have the stone along the road. I think the type of roads they are adopting now in Wayne county, Michigan, and in some parts of Ohio, of dirt and brick with dirt and gravel roads alongside for dry weather travel is a better proposition by far for such a state as we have. With gravel you can make use of local material for concrete roads, or concrete with dirt tops, and I believe that this is the type of roads that will be more satisfactory in this state.

The Chairman: In preparing our program we had two propositions—two live questions for Iowa people to consider, and upon the first one Mr. MacDonald presented the question of good roads. Our next paper is the question of publicity and advertisement by the state, and I have the pleasure in presenting to you, gentlemen of this convention, Mr. F. W. Beckman of the Department of Agricultural Journalism and Publicity at Iowa State College.

Prof. F. W. Beckman: I am going to talk to you rather informally because I have not had time to put what I want to say about advertising Iowa into a formal paper. I shall not pose as an authority upon advertising. I have been a newspaper reporter or editor ever since I left school and I have filled acres of space with news and opinions and other publicity matter, but I have not been in the business of advertising as such. At the same time, advertising has been more or less of a hobby with me and has received such study as a man gives to a hobby. There are some things, however, relating to this proposal to advertise Iowa that are so plain that any man of common sense, whether he be an advertising expert or not, is qualified to discuss. It is about those things that I want to talk this afternoon.

You will be interested, first of all, in two stories of real life in Iowa.

One is the story of a man in western Iowa who became dissatisfied with Iowa conditions some years ago. While in this frame of mind, he read glowing advertising accounts of the Wenatchee and other far western apple growing districts. Inspired to believe that he was wasting his abilities in cultivating mere Iowa soil, he determined to go west and find fortune there. He sold his land for something like $20,000 and invested most of it in twelve or fifteen acres of land in Washington at something like a thousand dollars an acre. He bought it at that price because it had been demonstrated that upon one-tenth of an acre a man had grown a crop of apples worth $50. Upon ten times that, or an acre, he could grow $500 worth, and upon ten acres he could grow ten times that, or $5,000 worth. So this Iowa man was thoroughly convinced that the land was worth a thousand dollars an acre at least. Only a year or so ago, an old neighbor visited this Iowa man who had gone west. To that old neighbor, he made this surprising statement when the two began to exchange confidences;

"My friend," he said, "if I had taken my $50,000 and invested it in some land I know of in Harrison county at a hundred dollars or so an acre, I would have been just as successful in establishing a commercial orchard there as I have been here. My experience is this, that a man has to face no greater problems in growing apples in the favorable sections of Iowa that he does out here. I wish I were back in Iowa and that I had understood Iowa and Iowa possibilities."

The other story in which you will be interested is about a man who lives in Waterloo and owns a farm or two near Waterloo. He is worth something like $150,000 or $200,000, and chiefly because Waterloo has been growing factory smoke stacks in the past ten years and the development of its industries has caused a great movement of population toward Waterloo. This man was wise enough to keep his farms and they have increased wonderfully in value. Not long ago, he needed a gasoline engine and a cream separator on his farm. He sent his money to Racine, Wisconsin, for the gasoline engine and to some city in New Jersey for his cream separator. He ignored absolutely the fact that in Waterloo, the city which had made him rich, are concerns which manufacture as good gasoline engines and as good cream separators as are made anywhere. His wealth had been made in Iowa; he had sent his good Iowa money away to buy the things that might have been bought at home.

What do these two stories indicate? Well, they indicate a number of things.

To begin with, the first story illustrates the great exodus of population from Iowa to other districts which has been going on for years, in large measure because Iowa people do not understand Iowa's possibilities. The census statistics show that more than half a million native born Iowans are living elsewhere, while only about 1,800,000 native Iowans are still living within the state. We have thus lost in recent years more than half a million of our sons and daughters who should have given the best in them to our state, but who have devoted themselves and their energies to the up-building of other commonwealths.

Every spring in one community or the other, car load after car load of household goods is loaded by people who are on the move in a vain search for better things elsewhere. California is populated largely by Iowans. They hold annual picnics on the coast which are attended by tens of thousands of former inhabitants of the Hawkeye state. At such a picnic at Los Angeles sometimes 40,000 to 50,000 former Iowa people actually register. The Dakotas, Minnesota, Colorado, Nebraska, Wyoming, the states of the northwest—Oregon and Washington—are filled with Iowans.

It is hard to estimate how much this loss of population has cost the state. It is probably true that if we represent the loss in dollars and cents it would not be less than half a billion dollars, counting human life at only a thousand dollars per individual, and that is as cheap as Iowa human life goes. This loss of population means also an enormous property loss, because these people took good bank accounts with them.

The property loss represents not less than another half-billion dollars, making a billion dollars in all.

This exodus of people has meant the loss of strong men and women and their influence and helpfulness in upbuilding Iowa. But worse yet, it has meant a black-listing of Iowa in the census reports, if I may use that word and it is not too harsh. In the population records Iowa has dropped to the bottom because this exodus has brought about this fact: Of all the states in the union, Iowa is practically the only one to show a loss of population in the period from 1900 to 1910. There is no use of dwelling upon these figures. They are stamped indelibly upon the memory, and the shame of them is fresh in the feelings, of every loyal Iowan.

The second story indicates that in all these years there has been a tremendous outflow of Iowa money to buy goods elsewhere and consequently that there has been less buying of homemade goods than there ought to be. It is difficult to estimate how much money Iowa folks send away from the state thus needlessly each year. It is safe to say, however, that it amounts to many millions every year.

There would be wonderful results for Iowa industries if Iowa folks bought in Iowa the goods that are produced in Iowa. I wonder how many of you ever made a study of the manufacturing statistics of the state. I wonder how many of you have any idea how many different things you might buy in the state if you wanted to. Iowa manufactures a variety of articles almost beyond belief, numbering 500 or 600 different things. The products manufactured in Iowa in 1910 were worth $335,000,000. Our farms, of which we boast most properly, produced grain crops in that same year worth $362,000,000. Those figures ought to convince you that there is not so great a difference in importance between Iowa's industries and Iowa's agriculture as we generally believe there is. It is because we do not know, that we persist in saying that Iowa is not a manufacturing state. It is because we have not opened our eyes to the development of Iowa industries. It is because we do not understand and appreciate what our manufacturers can do, that we send our money to help build factories outside the state and to encourage industry elsewhere. If our money had not gone all the years to buy goods elsewhere, if it had not been invested in factories elsewhere, Iowa would have even greater industries than it has today.

Last summer I heard an Indiana woman speak to an Iowa audience upon the rural life question as it concerned the matter of improving the rural districts. She made this striking statement: "If you people of Iowa would only spend in Iowa the money you made in Iowa, it would indeed be a garden of Eden." Let us give those striking words broader application. If we people of Iowa would spend for Iowa goods and Iowa products the money that we get from Iowa soil and from Iowa labor, this commonwealth would indeed be vastly greater in agriculture and industry than it is at the present time.

Because we do not know, because we do not appreciate either the agricultural or the industrial resources of the state, we have lost hundreds of thousands of men and women and we have lost hundreds of millions of dollars; yes, billions of dollars in material wealth.

But the greater loss of these two is the human loss, the loss of human genius and human skill which cannot be measured in dollars and cents. Of course, it is not possible to keep in Iowa all the genius born in Iowa, because genius naturally scatters to every direction of the compass. It is not possible to keep within the state and give opportunity to all the talent it produces, but think what would it have meant if we had kept in Iowa so great a genius as Armstrong who built the great terminal of the Northwestern Railway at Chicago. Think what it would have meant for the state if his genius for engineering had been directed to the development of the industries of Iowa. What would it have meant for the state if it had been possible to keep here George M. Reynolds, who ranks as one of the greatest financiers of the nation and if his energies had been directed toward the upbuilding of the commonwealth. What would it not have meant to the agricultural interests of the state if Iowa had not lost the late S. A. Knapp who left us to devote some of the greatest labor of his life to the agricultural development of the south. I might go on naming men whom we have lost and whose genius has helped to develop commonwealths elsewhere. There are artists—we cannot even keep here Iowa-made cartoonists and as soon as we develop one we let him go elsewhere to exercise his genius. There are scientists, doctors, journalists, agricultural leaders, captains of industry, who were born and reared in Iowa, but who have given the choicest labor that is in them to other people. The loss of these men has been great to our state, though of wonderful profit to the nation. It may not be fair to expect to keep them all, but it is reasonable that we should keep more of them than we do.

What is wrong?

Has not Iowa wealth? No man can say that it has not, because from sea to sea there is no more productive spot, no happier region. Those who know, say that in all the world there is no similar area of land which God has more bountifully blessed.

It is chiefly ignorance of Iowa's true worth and lack of understanding of her resources and her opportunities that are responsible for the outflow of both men and money from the state. Men do not understand that in both agriculture and in the industries they can find splendid opportunity for the investment of their money and their labor. They do not understand that they can buy of Iowa factories the majority of the things that they need to satisfy their physical needs.

How many of you men know that some of the choicest woolens made in the world today are made in Iowa? How many Des Moines people who go to buy a woolen blanket ask for an Amana blanket? Probably not many ever think of it. Yet in the city of New York those who are particular about blankets try to get Amana blankets. The buyers for the best New York department stores seek to get them for their trade. One big establishment advertised as though it were a tremendous achievement in business that it would put upon sale $39,000.00 worth of Amana blankets on a particular date. Yet in Iowa, but one man in ten, I will venture to say, if that many, knows anything of the Amana blanket or demands it when he buys a blanket for himself.

How many of us know of the wonderful development of the beet sugar industry in Iowa? How many understand that it is a successful industry and that Iowa might as well manufacture all of its own sugar as not? It is a successful industry and now well established. Yet a few years ago, when men who had confidence in the industry promoted the factory, not only were most Iowa people ignorant about what they were doing, but a few of those who did know almost killed the project. Hardly had the Waverly men started to manufacture sugar out of beets when some man, either through misguidance or otherwise, came out with an interview in a Des Moines newspaper to the effect that the industry was all buncomb, that the farmers were being fooled by it, and that it was not adapted to the state of Iowa. As a result of that newspaper article, the manager of that beet factory faced this situation: He had signed up farmers to grow something like 6,000 acres of beets for the year's campaign, but that total slumped immediately to 2,000 acres and he had hard trouble to get beets from 1,500 acres. That experience came very nearly being the destruction of the beet sugar industry in Waverly. It survived, however, and this year more than 5,000 acres of beets were successfully grown in Iowa by men who have learned how to do it and who have adapted themselves to the work, and are making a profit out of it. The average yield of beets in Iowa this year was something like twelve tons per acre, for which the farmer got $5.00 a ton if he delivered them on side track and $5.50 if he delivered them to the factory.

Beet growers are not going to make great fortunes out of growing beets, but let me tell you what one farmer did with a forty acre field this past season. It cost him something like $40 an acre to produce forty acres of beets that yielded about twenty tons per acre. He got $5.50 a ton for them. Twenty times $5.50 makes $110 per acre income. If his expense was $40 per acre, you can figure his profit quite readily.

As you go through the beet growing districts, you can recognize the farms on which beets are grown by the more prosperous appearance of the farming. That rule, of course, is not absolute, however, but the fact is here, that the beet grower is prosperous. He will tell you now that he understands it, that it has added something to his prosperity. It gives him a good cash crop and beet growing fits into the rotation and helps his land. Most of us are ignorant of these facts even today.

It is customary for folks to talk about western apples as though they represent the best, yet outside growers tell us that southwestern Iowa is the ideal home of the Jonathan apple, and the Jonathan apple, you know, cannot be beaten for all round usefulness. Every year since there has been a national exhibit of apples, an Iowa man from the western or southwestern part of the state has carried away the highest prizes for Jonathans. Season after season the growers of Colorado, Washington and Oregon have come to this annual show, determined to wrest the honors from Iowa growers, but in vain. Iowa can grow Jonathan apples as can no other district in the world.

As for Bartlett pears, Harrison county has won first-class honors again and again with its product. Down in Marion county, I am told, one man a year ago produced 14,000 bushels of pears upon eighty acres which he sold for something over $2.00 a bushel. It is estimated that his profit on that eighty acres ran from one to two hundred dollars an acre. What can be done one year under favorable conditions can be done another. Simons Brothers of Hamburg, Iowa, are commercial apple growers with forty acres in apples. Their receipts have run as high as $396 per acre, leaving a profit margin of $200, which is not bad for Iowa when most of us think that Iowa land is not adapted to fruit growing.

These stories of what men who have faith in Iowa soil are accomplishing at home might be multiplied without end. They may be told of crops of other kinds as well as fruit. For instance, onions may be grown profitably here even though popular opinion is that a man must go to Texas or California to produce them. We associate the Bermuda onion with parts of Texas and California, yet a man at Ottumwa named Schwartz has discovered the secret of growing Bermudas in that vicinity successfully and he has produced them as fine as they can be produced anywhere else. He does it with a new system of irrigation that he has devised and he expects, when he gets his land in full swing, to produce from 600 to 1,000 bushels per acre.

A farmer named Schutter in Scott county produced this past year 12,257 bushels of onions from thirteen acres, an average of 943 bushels per acre. One acre produced 1,200 or 1,300 bushels. He received an average price of 38 cents per bushel for them. A total of $4,657.00. He could not tell just how much it cost him to produce these onions, but according to government statistics on onion growing, it probably cost him from $150 to $200 an acre. Granting that it cost him the larger amount, his thirteen acres produced him a profit above all expense of $2,027. People who are ambitious to go into intensive farming need not go to Texas or California or the northwest when such opportunities lie right here ready for them.

These wonderful stories are not confined to agriculture alone. There are opportunities in manufacturing just as good as in agriculture. Up at Ames on the second floor of a building there may be found the largest pennant factory in the United States. You know what the pennants are, the banners used by high schools, colleges and clubs of all kinds. In Ames, the factory that makes these is the largest of its kind in the country and it has grown up there naturally. In the town of Nevada, a man has built up a candy factory which manufactures after-dinner-mints as a specialty and ships them by the ton lot to big dealers in New York and Philadelphia. There is a demand for every pound of stuff that he can produce and more, and it keeps him busy building up his establishment to meet the demands upon it. These are mere illustrations. I have not time to give any more. They are typical, however, and they make it clear that there is no reason why Iowa should not manufacture scores of things as successfully as it is manufacturing these pennants or these after-dinner-mints. As the story has been told me, one of the geniuses who got away from Iowa was Gillette, the safety razor man. Was there any reason why he and his ability could not have been turned loose in Iowa as well as somewhere else? The opportunity for both agricultural production and industrial production are here. It is simply up to us to make use of them.

Ignorance about Iowa and its resources has been largely responsible for this great exodus of population from the state and the out-flow of Iowa money to other sections for investment. Possibly a lack of sentiment may also be responsible. We have been accused of being disloyal to the state. I do not like to confess that, but there seems to be reasons to believe that we are not loyal to the state's best interests. If we would only adopt this motto, which has been proposed: "Grown in Iowa, made in Iowa," and then add to it "sold in Iowa;" if that sentiment could be held and acted upon generally, there would be no question about a marvelous development in the state. We are not sentimental enough about Iowa. We are too matter of fact about its great resources.

Moreover, we are seriously individualistic. To be plain, we are too selfish. We think too much of ourselves and our own particular individual interests and we do not think enough of Iowa in the large. We need to develop among ourselves more community interest and larger community sympathies. Our various towns and cities have only recently learned that there is benefit to be gained in co-operation. Our farmers and our towns people have not yet learned that they have common interests for whose promotion they should unite. We fight too much for our individual selves. We have not enough sentiment for the whole state. Recently I asked a man who knows Iowa thoroughly why it is that we are so wrapped up in our own local affairs, in our own smaller interests, and why it is difficult to get men to work for a large community interest. He said that he believed that it was due to the fact that in Iowa we have emphasized very strongly the importance of township government. This is uncommon. Township government and the authority of township officers have developed more strongly here than any where else, and that has been quite largely responsible for our individuality in Iowa and our lack of sentiment for a greater Iowa.

Besides that, there is a lack of faith in Iowa. Men do not believe strongly enough in the resources of the state. They do not have faith in its ability to produce to invest their money in industries and enterprises and to make the soil yield its utmost. Rather, they go elsewhere for opportunity, overlooking the chance that there is right at home.

What can be done to remedy this situation?

In the first place, it is important that the people of the state be educated to understand the importance of the resources of the state and the value of the opportunities that are here. Ignorance upon these things, lack of understanding about Iowa, are at the bottom of Iowa's problems.

How are we going to educate our own people to know Iowa, that being fundamental? There is only one way. I believe it must be done through publicity, through advertising, through the making known to ourselves what the resources of our state are. It must be done by holding up before the people such facts as I have given you here this afternoon, about the opportunities in the state and by telling them over and over again that Iowa is a land of opportunity agriculturally and a land of opportunity industrially. We must also, in addition, let the outside world know about our advantages and bring back to Iowa the wealth that has been flowing out from its borders to go elsewhere for many years. We must educate both our people at home and the people abroad to the appreciation of what Iowa holds within her boundaries. But the first task is home education.

How shall we proceed to do this? There is a good deal of difference of opinion about that. As I said at the beginning, I am not an advertising expert. I have no scheme or schemes for advertising Iowa that I want to recommend. I am not going to discuss the merits of any proposed plan of publicity for the state. I came here merely to say to you that we need to do something, that we need to do something right away, that we need to set about immediately to find out just what should be done. It may be that it will be wise to appoint a general publicity board or commission. That has been suggested, but I am not familiar enough with the details of that plan to discuss it.

I do have, however, one simple suggestion that I want to leave with you men of the agricultural society. It may seem so simple that it may not strike you as being worth while. My suggestion is based upon this idea: You remember the old declaration of war times that the way to resume specie payments was to resume. Well, the way to begin advertising Iowa is to begin. Moreover, I do not know any better way to begin than for your own agricultural society to begin. You already have an organization that can be used for this purpose and probably you can find enough money somewhere to make a start. The important thing right now, is to make a start and nowhere does anybody have a better opportunity to make a start than you do.

I suggest that somehow, someway you authorize your secretary to find a way to do for Iowa what Coburn has done for Kansas. Coburn has gained a wide reputation because of the valuable publicity he has given Kansas. He has brought Kansas into favor again after many years of disfavor and public disregard. He has given that state its proper place in the eyes of the world, and he has done it without any elaborate organization or machine back of him. When Coburn made up his mind to advertise Kansas, he just advertised it, that was all. He set out to advertise his state without any more fuss than he would start down town to his work in the morning, and he got there.

When I was asked to speak to you at this session, I wrote to Mr. Coburn and asked him to tell me something of his method of advertising Kansas and promoting that state's interests. I am going to read his letter here, because I believe that it points a way and offers just the practical kind of a suggestion that our society needs. This is Mr. Coburn's letter:

"Topeka, Kansas, 1912.

"F. W. Beckman, Ames, Iowa.

"Dear Sir: Your letter of November 25th is at hand, and I have gathered up a few samples of booklets, brochures, and the like, typical of the sort of advertising literature we have been disseminating ever since I have been secretary of the board, for nineteen years. There is no regularity about the issuance of these, and in fact, under the law, it is no part of our work. Neither are we provided with any funds for the purpose, and hence it might quite appropriately and truthfully be called "a work of love."

"The state has no officially designated 'Advertising Bureau' or 'Immigration Department,' and while the work of this board is mostly in behalf of the farmers who are here, I see so many ways to favorably exploit our resources, productions, possibilities and advantages, I cannot resist the temptation to let the world know about it, as often as I can spare time for that purpose. Doing something of this sort, that is not required of me officially, is in fact my recreation, and is thrown in with my other duties for good measure. We also issue a lot of short mimeograph articles about some feature of Kansas and her agriculture, which are sent to the agricultural and other papers throughout the nation, and abroad, and it is surprising what a large percentage use the material. This space of course costs us nothing, more than the labor of compiling the matter and the two-cent stamp for mailing it.

"Back of most of our advertising, stands our annual statistics, which the board of agriculture has gathered and compiled from the beginning, making a half-century record that affords a wonderfully prolific source of most excellent advertising matter, in showing advancement, growth and prosperity. The record has been consistently kept, without change of systems, and hence it is uniform for the whole period, making it of the very greatest possible value. It has of course been improved, that is, the method has been improved from time to time, but the whole scheme of our statistical work remains practically on the foundation on which it was first laid out.

"The real big work of the board, however, has been in its helpfulness to the man who is tilling our fertile prairies. The department, from its beginning as the state agricultural society in 1862, has issued quarterly and biennial reports, and these contain information of much value to the farmer. The biennial reports, for instance, are large, bound, illustrated volumes, in editions of 20,000 copies, but the supply is exhausted by the time the printer makes the delivery of the last installment. I presume you are familiar with these reports, or rather their appearances, anyway, and if not, and you wish to examine them, you will find them in the library of your college.

"I regret to say I cannot estimate the results of our publicity work, for I have no way of gauging that except in the immense mail it brings here, making request for more detailed information. We respond to these so far as possible by letter, and also mail a copy of our report entitled 'Kansas—Facts and Figures.' But, our office force is limited, and is kept busy with its other regular work, so that it is out of the question for us to take up each inquirer's letter and answer it as should be done, that is in detail. If this were attempted, it would of course mean some machinery for securing the information from the various localities in the state.

"It is likely you may be able to estimate the value to Kansas of my publicity work better than I. You know pretty well what it is worth to be placed before the world in a favorable light, particularly when any investigator will find that nothing but facts have been set forth.

"Quite a few strangers still judge Kansas by the early history of her pioneers, and I feel that we have to a considerable extent corrected that misapprehension, and that, too, is worth something.

"Very truly yours,

"F. D. COBURN."

In this letter there is a simple plan and a plan that is within your reach. It may be that a more elaborate scheme, including a board or commission, will be more satisfactory later, but it is difficult to get an elaborate scheme into motion. It is difficult to organize a large piece of machinery and get it well greased with the money needed to operate it. The Coburn idea has this to commend it. You can adopt it and use it with the office machinery you already have. At the most it will not be necessary for you to employ more than the part time of a first-class man and provide him with a little money for clerical work and postage. Coburn of Kansas carries on an extensive publicity work for his state and a mighty useful publicity work and at the same time he does many other things.

It seems to me that it is wholly within the province of the State Agricultural Society to do what Coburn of Kansas has done. Your society would be promoting in the best possible way the agricultural interests of the state by carrying on a campaign of publicity that would educate our people to an understanding of the opportunities that there are in Iowa. Of the need of advertising along this line neither you nor other men can longer have doubt. It is time that somebody did something to keep Iowa folks and Iowa money at home and no organization is in better position to make a start than yours.

The President: We have on the program this afternoon a man who has kindly consented to talk to you, and I present to you Lieutenant-Governor Harding of Sioux City:

Lieutenant-Governor Harding: Mr. Chairman and Gentlemen—It is a pleasure to me to meet with the farmers of Iowa. You are all actively engaged in the business. You know there is a false notion in the minds of some bankers and business men in the state that they are not farmers. The fact is that everybody who lives in Iowa and has any part in the industrial life of the state is a farmer, and therefore it seems to me that this fair association is one of the very important associations within the state.

I have no prepared speech to deliver this afternoon. This you will know from the fact that the program committee did not assign me a subject. I am at liberty then to wander around as I may see fit, and say a few things if they happen to occupy to me as I go along.

I understand that you are gathered here today to consider the work of the next year, and to complete the work of the past year. You have in charge the annual state fair that is held out here on the fair grounds. To my mind this is one of the largest, best and most important educational institutions in the state. One that is not appreciated as much as it ought to be by the people of the state, nor is it used as much by the people of the state as it deserves. It is not wholly the fault of the people nor is it wholly the fault of this agricultural society. We have been having it so easy in Iowa that we have neglected many of the important matters and things that other states have used, and to advantage. You talk about California and other western states that are advertised a great deal. If you go to plant an orchard in that western country, you have to build the place in which to plant the orchard. In Iowa you have the place already prepared, and so you don't plant the orchard. Iowa has the possibilities of being a great fruit producing state. And so it is with many other things; many of the magnificent things that are advertised in these other states are lying around loose in Iowa and not used. We have been just farming the surface of the soil here. We have not been digging down into the hidden things of Iowa. Iowa is rich in hidden treasures that are lying here to be opened up by us and by the coming generations.

The state fair, as I understand it, has two objects. One is entertainment—high-class entertainment—entertainment that will elevate the citizenship of the state. That feature of the fair is easy to care for. The other feature is education. The latter is the most important feature, and the one that should receive the most careful consideration here and at every other time when you meet. We all know that it is impossible for every citizen of the state to visit the state fair in Des Moines. The state fair ought not to be solely an agricultural exhibit. It ought to include every industry in the state. We ought not to be satisfied with having the best cattle, sheep, horses and hogs here and placing them on exhibition, but we should bring as well the best product of the inventive mind of the state and put that on exhibition. The state fair should be an educational institution where people can come and study the various subjects in which a great people are interested. If a man is interested in the blacksmith business, he ought to be able to come to the state fair and get information here that he can get nowhere else because the best should be here. The one thing about the state fair that is better than all the other fairs is that you have the best product of the state, and that you know is the ideal. Every successful man, every successful institution has an ideal. You find out here at the state fair the best animals that are raised in the state of Iowa. Anyone who is interested in that particular line of industry can go out there and have his ideal satisfied, or at least if it is not satisfied, or if he has not an ideal, then he can get the inspiration that will give him an ideal. The only thing in life that causes the boy to look forward and go through school, to go through hard work and drudgery is the fact that some place, somewhere, the boy sees an ideal to which he is building. You go into the schools, you read your newspapers, you go to church, they all hold up before you some man who has made a success in life, and point to him as the ideal. All these are inspirations to boys and girls to try and make their lives meet the ideals presented.

If you want Iowa farmers to raise good horses, furnish them with an ideal, something they can look forward to. When you have done this you have helped the individual so that he can go back home and go through the drudgery, the hard work and do it as a pleasure, because he has an ideal. When I was a small boy, one day I came along where an old man was plowing. He had a span of old horses and a walking plow. The ground was rough and hard and it seemed to me as though it was hard work to go through that performance. I said to him, "Uncle, that is pretty hard for you." But he said, "My lad, you are mistaken. This is not hard work. When I have hold of the handles of the plow I do not see the black hard soil there. I see next year, the green fields, I see the waving golden grain, I see the shocks, and finally, I see the grain in the bin and so I can go through this all day, because before me there is an ideal, the finished product." What we want to do at our state fair is to bring ideals before the people of Iowa, so that they will catch an inspiration and with this inspiration go back home and go through what to the average man would be drudgery, but to them will be pleasure. The problem is to furnish the ideal and then to scatter the inspiration from this ideal broadcast over the state. How are we going to do this thing? We have not been carrying the thing that is gathered here at Des Moines at the state fair back to the home folks.

I was down here a couple of years ago. I saw the stock parade. I was in the pavilion, and saw a million dollars' worth of stock in there one evening. One day I saw the horse races. Another day I went down to the various pens and around, then I went home. My neighbor did not attend, but I tried to tell him about it. He could not see the picture that I saw. There is something wrong. My neighbor was entitled to that the same as I was, but he did not happen to be a member of the legislature so he did not have a pass, and he figured more on passes than I did. I came down and got in and that is all right—(you have to educate the legislators). My neighbor hadn't the pass and he didn't get the benefit of the state fair. In the public schools they are teaching geography and other things with moving pictures. It has occurred to me, and I say this in all seriousness, the state of Iowa can well afford to invest money in the necessary machinery to take pictures of the crowds, the stock in the pens, the stock in the pavilion, and all of the other attractions that are on the fair grounds and take these back home to the people of Iowa by showing the pictures out in the school houses and around. Show the people of Iowa what the people of Iowa are doing. It might cost a little money, but what is the difference if it does. Who would not pay fifty cents any time to go into a moving picture show some night in his public school house or in the town hall, if he could see reproduced the state fair of Iowa. Would not this be carrying the ideals of the best people of Iowa industrially back to the folks who did not have opportunity to see this?

I notice a few professors from Ames here and I suppose there are some professors here from other educational institutions. It is a good thing to have these educators meet with this fair association. The criticism I have to make of our educational institutions is this: We pay men good salaries—maybe not as high as we ought to—and they dig away year after year working in science and mathematics and these various other studies and then give this information out only to the people who can afford to attend these institutions for a period of years. My criticism of the educational institutions of the state is that the knowledge which these professors have and the discoveries which they make are not reaching a large enough percentage of the people of the state. What the state ought to do is to take the results that these professors are obtaining and carry them out to the people of the state.

A boy is living on a farm. He has never passed through the high school and therefore cannot pass the entrance examination to any state school. He has to take care of himself. The boy who has had high school advantages, who can pass the entrance examination, can get into the state school. The state furnishes to the boy who wants to be a lawyer an opportunity to become a lawyer. When the state invests her money for education it is her business to invest it so that the investment will reach the individuals that need the education and those individuals who need this education are the ones far away from the centers, the ones who are not liable to get to these centers of education.

This suggestion in reference to educational institutions is one that can be fairly made to the state fair association. There is a new industry in this country. It is the moving picture industry. I do not know whether it can be worked out now or not, but I believe that the moving picture can be made a part of our great educational system in this state. There is an agitation on now for clean pictures; some of the preachers are fussing around about these picture shows trying to have it arranged so that only clean pictures can be shown. This is all right; we want clean pictures. You will never get clean pictures, however, by passing laws against dirty pictures. The state will get clean pictures when the state sees to it that clean pictures are furnished. Whose business is it to furnish these clean pictures? It is the business of the people and you are the people. You represent Iowa and it is your duty to initiate these things. Oh, I know how you feel because I have been sitting back of one of these desks. I have had men who are interested in these things, who have seen the opportunities and the possibilities and yet they would sneak up to my desk and say, "I beg your pardon; I am awfully sorry to encroach upon your valuable time, but if we had a little money we could scatter this information we have been accumulating here." Gentlemen, I say do not go to the legislature and beg; go to them and demand rights. You are the representatives of the people of Iowa and you have a right to demand these things. That is what you are put in these positions for. You are not doing your duty to the people unless you do present these needs in an open and manly way to the legislature. If the legislature does not send men here big enough to listen and meet these demands, then see that such men are sent here. We will never become a big state on the three cent plan. People are willing to pay taxes if they know that the money is going to bring results. Do not blame the people for not wanting to pay taxes if they only get thirty-five cents on the dollar in value. The trouble with Iowa has been this: We make the original investment and then do not go on and spend the necessary money to make that investment pay dividends. It is not fair to you men who devote your time and energy to building this great fair out here that it should simply be in existence for one week in the year. The information that can be and is accumulated here ought to be used during the weeks and months of the coming year and taken where it will do the most good. Where it will reach all the people of the state. The way to do this is to create a publicity department.

I was very much interested in what my good friend Beckman said about the beet industry of Waverly. It occurred to me, friend Beckman, that perhaps the state of Iowa ought to have taken legal action against that newspaper which published the interview which nearly killed the beet indutry in the state. Every once in a while some newspaper will take a rap at Iowa, at some of Iowa's industries, in the guise of news and nearly strangle the thing to death. My good newspaper friends, I hope you will talk over with the managing editor the importance of seeing to it that the news items that go out do not injure enterprises in the state. I do not believe a newspaper has or ought to have the right to print such stories until it finds out whether they are facts and whether or not they will injure the interests in the state that ought to be protected. Print the truth, but do not print the "hot air" stories simply for the sake of printing something.

A friend of mine was telling me today that Iowa leads the nation in the production of corn and oats. This, as I understand it, is according to government report. I have not seen the news in any newspaper printed in Iowa. Such a startling fact ought to furnish a slug head in some good Iowa newspaper. If some of those western states had something like that they would telegraph it around the world every day for a week. They would let the folks know everywhere that they were leading in something, yet in Iowa we go along and pay no attention to these things. What we want is better co-operation for publicity. What we want is better co-operation among organizations of this kind and our newspapers. They want the news. The public wants the news and the news will help Iowa.

I have had in a small way experience on the other side of the question. I was a reporter once and I know how hard it is to get news out of the fellow who really has information to give out. The newspapers of Iowa would gladly print many of the important facts that have been displayed here this afternoon by our friends, but nobody gives them to the papers. The reporter is a busy man. The sensational story is easy to write and is eagerly sought by the public. The result is the sensational story is furnished rather than the cold, hard facts. We need publicity in Iowa and the fair association of the state owes a duty to the state to see to it that the information that is gathered because of its position here is scattered broadcast over the state. If it needs a little money to do the work with it is the business of the legislature to furnish it with the money. It does not require very much money to do these things, but whatever is required ought to be spent. When we have done this we will have accomplished much for this good old state which we all love. Iowa has a great fair. Everyone who attends once wants to come back. Many people, however, cannot shape their plans so they can be here just during the week that the fair is held and I believe it is worthy of your consideration that you take up and work out some method whereby you can carry back to the people of Iowa some conception of the magnificent exhibition that you have out on the state fair grounds.

I do not know whether I have suggested anything along this line that will interest you, but I do know that personally I am interested in Iowa; that I am interested in the fair; that I am interested in education. I love this old state. She has always been my home and I trust always will be. I trust I shall always be willing to stand out on the firing line and fight for the things that will make Iowa known to Iowa people and make it a better state in which to live and a better state growing continually so that finally we can say that Iowa is the best state and the best place in the union to live. That she has the best educated people, the best moral people and then everything will be as we desire. We have the opportunity; we have the soil; we have the climate; we have everything. All we have to do is to put our hands to the plow and all push together. I believe there are greater things to Iowa than any of us have ever dreamed. (Applause.)

The President: This concludes our program for this afternoon. Tomorrow morning at 9:30 in this room will convene the business meeting of the association. The department of agriculture report. The report of the secretary and treasurer. The report on the benefits of the boys' state fair camp is very interesting.

Mr. Mershon: I asked Mr. MacDonald a question that I think he did not fully understand. Anyway he did not answer it. It was something as to the method of giving prizes for the best upkeep of the road. The point in my mind was by the local or township road boards. Whether that had been worked out anywhere as far as you knew or not, and whether it was feasible.

Mr. MacDonald: I did not understand the question to be that at all. I thought he had reference to state aid. There is a town in this state that has probably done more along the line of giving prizes than any other place with which I am familiar. Mount Ayr, in the southern part of the state, has developed a road system leading into Mount Ayr to a remarkable degree by giving prizes for the best maintained earth road, maintained by the use of the road drag. We are to have a discussion on that next week by Mr. Beard. They call it the Mount Ayr plan of road building, and it has been a very successful plan. The giving of prizes by the commercial club in that case, and I see no reason why the state should not take an active part in something of that kind. I believe for the maintenance of earth roads by the use of the drag that the state could afford to maintain in every township either a system of prizes for one or more miles of road that would be kept up in the township as an object lesson for the township, or would simply pay to have the work done, and regard it as a maintenance proposition.

Mr. Mershon: What is the nature of these prizes?

Mr. MacDonald: They are cash prizes. I am not familiar with the amounts of them. I think the cash prizes have run as high as fifty dollars for a mile of road. I am not familiar with the details of the prizes offered, but they are cash prizes.

The meeting then adjourned.

PART VI

SYNOPSIS OF PROCEEDINGS
OF
STATE BOARD OF AGRICULTURE
AND
COMMITTEE MEETINGS
1911-1912

MEETING OF THE STATE BOARD OF AGRICULTURE.

THURSDAY, DECEMBER 14, 1911.

Meeting was called to order by the president at 10:00 a. m. and the following members responded to roll call: Cameron, Olson, Corey, Johnston, Reeves, Curtin, Curtiss, Sheldon, Summers, Mullen, Pike, Barney and Gibson.

Minutes of the meeting of the board on September 2nd were read and approved:

The matter of fines imposed upon O. V. Battles and J. R. Peak & Son, exhibitors at the 1911 state fair who failed to lead out their stock for the parade on Friday afternoon, was discussed. Mr. Johnson moved that in the case of Messrs. Peak $25.00 of the fine be retained and the balance ($75.00) forwarded to them. Seconded by Mr. Reeves. Motion prevailed.

In the matter of protest against the colt exhibited by Peter Hopley & Son in the Belgian Futurity, Mr. Curtiss moved that the protest be not sustained in view of the fact that the evidence submitted substantiated the breeding of the colt as claimed, and that the premiums, amounting to $100.00, won by this colt be paid to Peter Hopley & Son. Seconded by Mr. Pike. Motion prevailed.

The following newly elected members were sworn in by H. L. Bosquet: Messrs. Cameron, Olson, Johnston, Reeves, Curtiss, Summers, Mullen and Pike.

The Board proceeded to the election of a secretary and a treasurer for the ensuing year. Mr. Johnston moved that Mr. A. R. Corey be elected secretary, at the salary fixed by law ($1,800.00). Seconded by Mr. Sheldon. Election unanimous.

Mr. Curtin moved that Mr. G. S. Gilbertson be elected treasurer to succeed himself, at a salary of $100.00, for the ensuing year. Seconded by Mr. Pike. Election unanimous.

Mr. Curtiss moved that the Secretary be required to give a surety bond for $10,000.00, and that the fee for same be paid from the fair receipts. Seconded by Mr. Sheldon. Motion prevailed.

Mr. Corey made a report concerning expenditures, receipts and improvements for the past year, with recommendations and suggestions for the coming year as follows:

RECEIPTS OF 1911 FAIR COMPARED WITH 1910.

	1911	1910	Increase	Decrease
Horse department	$ 1,729.00	$ 1,702.00	$ 27.00	------------
Cattle department	1,146.00	898.00	248.00	------------
Sheep department	170.00	508.00	------------	$ 338.00
Poultry department	658.05	393.00	265.05	------------
Swine department	1,206.00	908.00	298.00	------------
Machinery department	3,641.50	3,071.92	569.58	------------
Agricultural department	1,172.50	805.00	367.50	------------
Dairy department	1,036.35	823.55	212.81	------------
Fine arts department	2,800.00	2,575.00	315.00	------------
Transportation and public safety department	34.75	6.65	28.10	------------
Concession department	24,182.47	21,422.03	2,760.44	------------
Speed department	5,351.50	5,907.15	------------	555.35
Exhibitors' tickets	2,604.00	2,398.00	206.00	------------
Forage department	6,502.97	5,616.92	886.05	------------
Association special premiums	5,092.27	4,212.91	879.36	------------
Miscellaneous receipts, secretary's department	626.50	1,039.39	------------	412.89
Ticket sales	121,505.50	104,584.00	16,921.50	------------
Sale of light and power	------------	388.25	------------	388.25
	$179,549.67	$157,259.77	$ 23,984.30	$ 1,694.49

Increase—$22,289.90.

COST OF ADVERTISING 1911 FAIR.

Country weekly papers	$2,609.25	
Plates for weekly papers	635.13	
Papers in foreign languages	11.00	
Daily papers outside of Des Moines	260.99	
Miscellaneous Des Moines papers	156.87	
Des Moines city daily papers	1,113.57	
Agricultural and live stock papers	1,156.65	
Horse papers (speed program)	464.42	$ 6,407.88
Pay roll publicity department	$ 660.25	
Printing 5 editions "Greater Iowa"— 5,000 each 2-8 pg., 3-4 pg.	231.45	
Postage on "Greater Iowa"—5 issues	215.00	1,106.70
10M "Ding" hangers	$ 379.50	
100 M 2 color 8 pg. heralds	398.25	
Outdoor signs	133.28	
Miscellaneous advertising	45.50	956.53
For distribution of advertising matter	$ 769.00	
Billboard service and paper	586.88	1,355.88
Cuts and electros	$ 179.00	
Miscellaneous printing	57.49	
Photos 1910 and 1911 fairs	274.00	
Miscellaneous advertising items	114.58	625.07
		$10,432.06

STATEMENT OF RECEIPTS ON ACCOUNT OF TICKET SALES FOR 1911, COMPARED WITH 1910.

	1911	1910	Increase
General admission	$ 75,589.00	$ 66,750.50	$ 8,838.50
General admission after 5 P. M.	2,290.25	2,067.75	222.50
Children and half fares	6,325.75	5,857.50	468.25
Campers	3,130.00	2,272.00	858.00
Total outside gates	$ 87,335.00	$ 76,947.75	$ 10,387.25
Day amphitheater general admission	$ 8,526.50	$ 6,553.50	$ 1,973.00
Day amphitheater reserved seats	6,005.25	5,121.00	884.25
Day amphitheater box seats	1,567.50	1,031.25	536.25
Day amphitheater quarter stretch	777.25	320.25	457.00
Total day amphitheater	$ 16,876.50	$ 13,026.00	$ 3,850.00
Night amphitheater general admission	$ 7,808.50	$ 6,254.50	$ 1,554.00
Night amphitheater reserved seats	4,660.75	4,130.50	530.25
Night amphitheater box seats	1,063.50	800.25	263.25
Total night amphitheater	$ 13,532.75	$ 11,185.25	$ 2,347.50
Stock pavilion reserved seats	$ 3,301.50	$ 3,048.50	$ 253.00
Stock pavilion standing room	459.75	376.50	83.25
Total stock pavilion	$ 3,761.25	$ 3,425.00	$ 336.25
Total ticket sales	$121,505.50	$104,584.00	$ 16,921.50

STATEMENT OF EXPENSE OF 1911 FAIR COMPARED WITH 1910.

	1911	1910	Increase	Decrease
Executive committee meetings	$ 991.00	$ 485.40	$ 505.60	------------
Special committee meetings	1,266.04	998.62	277.42	------------
Express, telegraph and telephone	327.95	362.40	------------	$ 34.45
Postage	861.50	700.00	164.50	------------
Printing	2,814.13	2,012.63	------------	------------
Printing tickets	------------	749.04	52.46	------------
Advertising	10,452.06	9,985.19	466.87	------------
Music and attractions	24,345.78	25,520.25	------------	1,174.47
Light and power	782.64	1,641.65	------------	859.01
Water	436.06	315.73	120.33	------------
Office supplies, stationery, etc	259.48	314.41	------------	54.97
Forage	5,963.29	5,404.54	558.75	------------
Salaries and clerical hire	2,740.75	4,265.00	------------	1,524.25
Board meetings	645.50	707.80	------------	62.30
Assistants and foremen	485.54	139.31	346.23	------------
Scavenger work	848.13	648.40	199.73	------------
Cleaning grounds	914.32	------------	------------	------------
Cleaning buildings	1,199.87	2,045.60	------------	------------
Cutting grass and weeds	174.90	------------	------------	------------
Hauling manure	615.55	------------	859.14	------------
Miscellaneous labor during fair	904.25	1,437.68	------------	533.43
Care of streets during fair	99.05	89.75	9.30	------------
Track work	324.09	396.42	------------	72.33
Pay roll and expense president's department	453.50	435.50	18.00	------------
Pay roll and expense secretary's department	675.55	681.40	------------	5.85
Pay roll and expense treasurer's department	2,006.75	1,682.95	323.80	------------
Pay roll and expense concession department	1,530.15	1,164.10	366.05	------------
Pay roll and expense speed department	938.20	686.15	252.05	------------
Pay roll and expense horse department	1,245.20	1,230.50	14.70	------------
Pay roll and expense cattle department	1,272.15	1,027.05	245.10	------------
Pay roll and expense swine department	610.40	614.55	------------	4.15
Pay roll and expense sheep department	394.00	295.00	99.00	------------
Pay roll and expense poultry department	327.62	253.00	74.62	------------
Pay roll and expense machinery department	583.35	742.72	------------	159.39
Pay roll and expense agricultural department	597.90	382.50	215.40	------------
Pay roll and expense dairy department	312.50	186.75	125.75	------------
Pay roll and expense horticultural department	245.59	170.15	75.44	------------
Pay roll and expense floricultural department	88.00	77.00	10.50	------------
Pay roll and expense fine arts department	590.90	588.81	2.09	------------
Pay roll and expense school exhibits	254.88	268.86	------------	13.98
Pay roll and expense admissions department	2,683.85	2,253.39	430.36	------------
Pay roll and expense transportation and public safety	3,516.01	3,655.46	------------	139.45
Pay roll and expense ticket department	537.25	482.00	55.25	------------
Pay roll and expense women's rest cottage	58.15	59.60	------------	1.45
Model farm exhibit	602.30	1,377.73	------------	775.43
College exhibit	600.04	605.79	93.25	------------
Plants and flowers	561.85	492.18	69.67	------------
Freight and drayage	31.88	36.75	------------	4.87
Iowa Pioneers' day	167.05	131.28	35.77	------------
Premium ribbons and badges	708.43	632.15	76.28	------------
Boys' and girls' contests	61.46	75.71	------------	14.25
Decorating buildings	414.52	290.00	124.52	------------
Rental tents, chairs, etc.	651.75	565.50	86.25	------------
Miscellaneous—				
Tan bark and sawdust	223.51	------------	------------	------------
Grounds department supplies	218.16	1,148.84	------------	------------
Refund on admissions	50.50	------------	------------	------------
Dues American Trotting association	100.00	------------	------------	------------
Refund special premium money	190.00	------------	------------	------------
Miscellaneous expense	545.83	------------	179.17	------------
	$ 81,603.12	$ 80,513.68	$ 6,523.45	$ 5,434.01

Net increase—$1,089.44.

COMPARATIVE STATEMENT OF PREMIUMS PAID, 1910 AND 1911

	1911	1910	Increase	Decrease
Horses	$ 14,184.00	$ 10,381.00	$ 3,803.00	
Cattle	12,061.00	11,778.00	283.00	
Swine	3,640.00	4,135.00		$ 495.00
Sheep	2,388.00	2,146.00	242.00	
Poultry	1,042.00	1,036.00	6.00	
Agriculture	3,524.00	3,074.00	450.00	
Pantry and apiary	856.50	798.00	57.50	
Fruit	1,115.75	892.00	223.75	
Dairy	627.00	602.00	25.00	
Plants and flowers	1,278.60	945.00	333.60	
Fine arts	1,744.50	1,753.50		9.00
Schools	493.00	422.00	71.00	
Scholarships	850.00	1,000.00		150.00
Speed department premiums	12,310.00	10,755.00	1,555.00	
Auto parade premiums	150.00		150.00	
	$ 56,264.35	$ 49,717.50	$ 7,200.85	$ 654.00

Net increase—$6,546.85.

	1911	1910
Expense of fairs	$ 81,603.12	$ 80,513.68
Premiums	56,264.35	49,717.50
Total	$137,868.51	$ 130,231.18

Increase—$7,636.33.

FINANCIAL STATEMENT.

Balance on hand December 1, 1910	$ 7,283.44	
Receipts other than fair	83,275.72	
Receipts of fair	179,549.67	
Total receipts		$270,108.83
Disbursements other than for fair or improvements	$ 4,429.29	
Expense of fair	137,867.51	
Cost of improvements	109,775.04	
Total disbursements		252,071.84
Estimated receipts from stallion certificates	$ 3,500.00	
Estimated receipts from sale of light plant apparatus	2,000.00	
State appropriation for insurance	1,000.00	
Additional credit		6,500.00
Total credit		$ 24,536.99
Unpaid balance on contracts and bills on file:		
Massillon Bridge & Structural company contract	$ 294.12	
J. E. Lovejoy, machinery building contract	193.68	
J. E. Lovejoy, closet contract	100.75	
Des Moines Electric company, balance on bill	392.27	
Miscellaneous unpaid bills on file	91.14	
Balance of state appropriation for land in hands of treasurer	2,625.00	
Total debits		3,696.96
Net credit		$ 20,840.03

IMPROVEMENTS FOR 1912.

The foregoing statement shows there will be available about $21,000.00 of this year's receipts and receipts up to April 1, 1912. The expenditures necessary to pay balances on contracts, outstanding bills, and the running expense of the department up to May 1, 1912, will amount to about $7,000.00. This is in accordance with disbursements for the past two years.

I am not going to attempt to make recommendations for improvements for another year for I feel the board is perfectly familiar with the needed improvements and are better qualified to determine what should be done. However, in order to assist the board as much as possible and to call attention to a few improvements that have been talked over by the committee and other members of the board, I wish to remind you of the following:

I believe the board should consider the advisability of putting in cement curbing around the exhibit spaces in the machinery building. From the present outlook it will be impossible to floor this building for a year or two at least. This curbing will give uniform height to all exhibit platforms and will do away with the expense of putting in 2x6 temporarily around the platforms as was necessary last year. This curb is contemplated in the completed floor and will be a permanent improvement if made at this time. There are 4,600 lineal feet of this curbing and it would cost 15 cents per foot, or $790.00.

The board should also give serious consideration to the placing of a cement floor in the agricultural building. We are all familiar with the condition that has existed in this building for years, especially the last year when the grounds were extremely dry and dusty. On account of the central location of this building, and the large crowds that continually pass through it, it has been impossible to keep down the dust or to preserve the exhibits in good shape. There is a total of 2,000 sq. ft. of floor space, and at the best estimate received it would cost .06c per sq. ft., or $1,920.00.

For your information I am also presenting an estimate on some other cement work that I secured estimates on:

To combination curb and gutter on south side of Grand Avenue from N. E. corner of Machinery Building to Grand Avenue entrance, and on north side of Grand Avenue from bridge to entrance, 1,400 ft. at 40c per foot	$ 560.00
To combination curb and gutter from a point N. E. of Agricultural Building on Grand Avenue and south on east side of Rock Island Avenue to Capitol Avenue, 600 ft. at 40c per foot	240.00
To cement driveways on north side of Machinery Building, 3,000 sq. ft.	
To 20 foot walk along north and east sides of Machinery Building, 19,000 sq. ft.	1,980.00

I believe we will all agree that the club dining hall is too small to properly accommodate the help that avail themselves of its privileges. It has been suggested that the space under the porch east of our kitchen and immediately north of the present room be excavated and fitted up for the board table. This could be done at a small expense.

It has been suggested that we could, for the expense of the apparatus, install ten or a dozen shower baths in the room west of the closet under the seats in the swine pavilion, for the use of the exhibitors and help engaged in the care of stock. I am sure this would be appreciated by our exhibitors and inasmuch as we have provided wash stands for the stock it might be well to give the human being a little consideration along this line.

There is another matter of improvement that I believe the board should give consideration at this time, and that is changing the street car entrance as contemplated in our permanent ground plans. We now have a deed on file for fifteen of the thirty-five lots that it will be necessary for the department to acquire in order to make the change. About one-half of the remaining lots will have to be condemned and the balance will be purchased by our agents as soon as titles can be perfected. In making this change we will gain the use of 224,650 sq. ft., or a little more than five acres of land. Over one-half of this ground is now occupied by street car tracks, loop and station, and the balance would be added by the twenty-seven lots purchased along Walnut street. The fact that we would gain five acres of ground in the most congested district on the grounds, which could be used to advantage for concessions, machinery exhibit, etc., should command your attention. This change would greatly improve the transportation facilities between the grounds and the city, as the plan calls for storage tracks where cars may be set out during the slack in traffic in the afternoon. We are all familiar with the present arrangement whereby the street car company stores cars on the main track during the afternoon and evening. This necessitates discharging passengers near the drug store and requiring them to walk 800 feet along a string of cars and over a narrow cinder walk to the street car entrance, or else walk up Thirtieth Street to the Grand Avenue entrance.

STATEMENT SHOWING AMOUNT OF INSURANCE IN FORCE ON BUILDINGS, AMOUNT OF PREMIUMS, AND DATES OF EXPIRATION.

Building	Fire	Total	Tornado	Total	Premi'ms	Expi'at'n
General forms		$ 47,000.00		$ 47,000.00	$1,694.35	9-30-13
Swine pavilion			$ 3,000.00			9-30-13
Swine pavilion			12,000.00	15,000.00	75.00	9-26-13
Farm house and barn		2,000.00		2,000.00	26.00	9-26-13
Horse barn (brick)	$ 5,000.00		5,000.00			9-21-13
Horse barn (brick)	3,500.00					4- 8-12
Horse barn (brick)	6,500.00	15,000.00	10,000.00	15,000.00	432.50	9-19-12
Cattle barn (brick)	3,000.00		3,000.00			9-26-13
Cattle barn (brick)	3,000.00	6,000.00	3,000.00	6,000.00	180.00	7- 7-12
Power house		4,000.00		4,000.00	120.00	9-26-13
Agricultural building	3,000.00		3,000.00			5-12-14
Agricultural building	3,000.00		3,000.00			5-13-14
Agricultural building	4,000.00	10,000.00	4,000.00	10,000.00	300.00	5-23-14
Administration building	13,000.00		10,000.00			8-18-14
Administration building	4,000.00	17,000.00	3,000.00	13,000.00	490.00	8-17-14
Stock pavilion		15,000.00		13,500.00	450.00	8- 1-14
Closet near horse barns		1,500.00		1,500.00	82.50	8- 1-14
Street car depot		3,000.00		3,000.00	131.26	8- 5-12
Brick dining hall		4,000.00			100.00	8-14-12
Machinery building				15,000.00	75.00	8-20-14
Administration building furnishings	2,000.00		1,000.00			8-18-14
Administration building furnishings	1,000.00	3,000.00	1,000.00	2,000.00	85.00	8-17-14
Total		$127,500.00		$147,000.00	$4,211.61	

EXPIRATIONS.

	Fire	Tornado	Premiums
1912	$ 20,000.00	$ 16,000.00	$ 603.76
1913	61,000.00	76,000.00	2,155.35
1914	46,500.00	55,000.00	1,452.50
	$127,500.00	$147,000.00	$ 4,211.61

On motion the Board adjourned until 1:30 p. m.

AFTERNOON SESSION.

THURSDAY, DECEMBER 14, 1911.

The following members were present at the afternoon session: Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Curtiss, Sheldon, Summers, Mullen, Pike and Gilbertson.

Prof. A. V. Storm, Superintendent of the School Exhibits Department, made a report of his department. On motion of Mr. Summers the report as read was accepted, including recommendations for 1912, the amount of premiums offered to be limited to $1,000.00.

The matter of a boys' camp at the 1912 state fair was discussed. Mr. Reeves moved that a plan be adopted along a line similar to that in vogue in New York; seconded by Mr. Curtiss. Motion prevailed. Mr. Curtiss moved that the president appoint a committee of three to outline and present a plan in detail; seconded by Mr. Mullen. Motion prevailed. The president appointed as such committee Curtiss, Reeves and Corey.

Mr. Chapman of Minneapolis made a short talk in regard to agricultural extension work throughout the United States, stating that the Bankers Association stood ready to lend their aid and influence to such movement as the agricultural interests of the various states recommended.

Mr. Curtiss offered the following resolution and moved its adoption; seconded by Mr. Pike. Motion prevailed and the motion as read was adopted.

Resolved, That the Iowa State Board of Agriculture favors legislation granting federal aid for extension work in agriculture and home economics in the several states and territories under the direction of the agricultural colleges; and federal aid for instruction in agriculture, home economics and the trades and industries in the secondary schools, and for the training of teachers in the state normal schools and agricultural colleges for instruction in these branches under such regulations as the state legislature may establish.

The secretary read a report on the boys' judging contest at the last fair and recommendations for the coming year from the superintendent of the contest. On motion of Mr. Curtiss, seconded by Mr. Johnston, the rule requiring each contestant to bring an ear of corn was eliminated, and the amount of prizes offered was allowed to remain the same as for 1911. The girls' cooking contest was discontinued.

John W. Budd, city engineer for Des Moines, appeared before the board in regard to the proposed Seventh Ward sewer in the vicinity of the fair grounds and explained its location, probable cost, etc.

Mr. Curtiss moved that the board recommend to the governor the re-appointment of Dr. Geo. M. Chappel as director of the Iowa Weather and Crop Service; seconded by Mr. Olson. Motion prevailed.

Mr. Phillips moved that the management of the 1912 state fair be delegated to the executive committee and the elective members of the state board of agriculture; seconded by Mr. Curtiss. Motion prevailed.

Mr. Johnston moved that the executive committee appoint the superintendents of the various departments and report same later; seconded by Mr. Curtin. Motion prevailed.

Mr. Sheldon moved that Jas. H. Deemer be elected superintendent of the fair grounds for the ensuing year at a salary of $1,200.00, with free pasturage for two cows and not to exceed ten head of hogs and one team, and grain and hay for one team which are to be used for work on the grounds. Motion seconded and prevailed.

Mr. Johnston moved that the days and dates for the 1912 state fair be from Thursday, August 22nd, to Friday, August 30th, inclusive, the same rate of admissions as charged in 1911, and that all exhibits be held on the grounds until six o'clock Friday evening and the gates be guarded by the police until that hour. Seconded by Mr. Mullen. Motion prevailed.

Mr. Curtin moved that the president appoint a committee of three to confer with the Great Western and Rock Island railway officials to see if something could be done to better the loading facilities at the fair grounds. Seconded by Mr. Reeves. Motion prevailed. The president appointed as such committee Messrs. Curtin and Johnston.

The executive committee recommended that the superintendents of departments be as follows, and on motion of Mr. Johnston, seconded by Mr. Sheldon, the report of the committee was accepted.

SUPERINTENDENTS OF DEPARTMENTS, 1912.

Transportation and Public Safety	E. M. Wentworth
Tickets	C. W. Phillips
Admissions	O. A. Olson
Concessions and Privileges	W. C. Brown
Grounds	J. H. Deemer
Live Stock Sanitation	J. I. Gibson
Horses, Ponies and Mules	C. F. Curtiss
Speed	E. J. Curtin
Cattle	H. L. Pike
Swine	R. S. Johnston
Sheep	J. F. Summers
Poultry	J. F. Summers
Implements and Machinery	J. P. Mullen
Agriculture	F. E. Sheldon
Pantry Stores and Apiary	F. E. Sheldon
Dairy	W. B. Barney
Horticulture	E. M. Reeves
Floriculture	Wesley Greene
Fine Arts, etc	T. C. Legoe
School Exhibits	A. V. Storm
Publicity	Ora Williams

Mr. Curtiss moved that the matter of the score card privilege for 1912 be referred to the executive committee with power to act; seconded by Mr. Olson. Motion prevailed.

On motion of Mr. Reeves the board adjourned until 9 a. m., Friday, December 15th.

Mr. Wentworth moved that the revision of the premium list for 1912 be referred to the executive committee and the superintendents of the three live stock departments; seconded by Mr. Mullen. Motion prevailed.

Mr. Mullen recommended that the floor in the machinery building be laid before the next fair, and that the aisles be reduced to 15 or 16 feet; that the size of signs to be used in the building be specified; and that gasoline engines propelled by their own power be eliminated. Also that notice be given through the premium list that exhibitors may have space heretofore occupied by them if they notify the secretary before the first of July of their intention to occupy same.

Mr. Wentworth recommended that the executive committee authorize Mr. Deemer before the winter passed to make such alterations in the camp grounds as would change the streets and make it more convenient to get tents pitched and get the people through.

Mr. Curtiss presented a form of inquiry to be addressed to live stock exhibitors in the matter of improving the shipping facilities and moved that the secretary be instructed to send same out; seconded by Mr. Olson. Motion prevailed.

MEETING OF STATE BOARD OF AGRICULTURE.

FRIDAY, DECEMBER 15, 1911.

Board met at nine o'clock Friday morning with the following members present: Cameron, Olson, Corey, Johnston, Reeves, Wentworth, Curtiss, Sheldon, Summers, Mullen and Pike.

Mr. Wentworth took the oath of office before H. L. Bosquet.

Minutes of the meeting of December 14th were read and approved.

The surety bonds of Secretary Corey for $10,000.00 and the bond of G. S. Gilbertson, treasurer, for $50,000.00, were presented. Mr. Curtiss moved that the bonds be approved and placed on file; seconded by Mr. Wentworth. Motion prevailed.

The matter of a babies' health contest at the 1912 state fair was presented to the board by a committee composed of Dr. Lenna L. Meanes, representing the American Medical Association, Mrs. Brown, representing the National Mothers' Congress, and Mrs. Johnston, representing the Mothers' Congress of Des Moines.

On motion the board adjourned until 1:30 p. m.

AFTERNOON SESSION.

FRIDAY, DECEMBER 15, 1911.

Members present: Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Wentworth, Curtiss, Summers, Mullen, Pike and Gilbertson.

Mr. Curtiss moved that the executive committee be authorized to change the street car entrance as contemplated on the plans, provided satisfactory arrangements could be made with the street car company. Seconded by Mr. Pike. Motion prevailed.

Mr. Curtiss moved that the executive committee be authorized to put on a dog show at the 1912 state fair, provided satisfactory arrangements can be made with the American Kennel Club. Seconded by Mr. Summers. Motion prevailed.

Mr. Johnston offered the following resolution and moved its adoption:

Resolved, That the board appropriate not to exceed $500.00 for a baby health contest; that suitable place be arranged for; that the executive committee be authorized to appoint a superintendent of the department; it being further understod that the Mothers' Congress procure all necessary help and assistants and that the American Medical Association arrange for judges; the assistants and judges to work without remuneration from the state fair board.

Seconded by Mr. Wentworth. Motion prevailed.

Mr. Curtiss moved that the executive committee be authorized to make improvements in the club dining room in the administration building by excavating east of the kitchen and making a dining room for the board. Seconded by Mr. Curtin. Motion prevailed.

Mr. Curtiss moved that the executive committee be authorized to install what shower baths are deemed necessary in the south side of the swine pavilion this year. Seconded by Mr. Pike. Motion prevailed.

The matter of a floor in the agricultural building was discussed and Mr. Reeves moved that the executive committee be instructed to have a cement floor put in; seconded by Mr. Wentworth. Motion carried.

Mr. Reeves moved that a brick or cement floor and curbing around the exhibit spaces be put in the machinery building before the next fair. Seconded by Mr. Mullen. Motion prevailed.

Mr. Johnston moved that the president appoint a committee on per diem and mileage; seconded by Mr. Wentworth. Motion prevailed. The president appointed as such committee Messrs. Johnston, Wentworth and Curtin.

Mr. Curtiss moved that the board make the same appropriation as last year for the Agricultural College exhibit, or whatever may be necessary up to $800.00 to duplicate the amount put in by the college. Seconded by Mr. Pike. Motion prevailed.

Mr. Wentworth moved that the members of the board who attended the International Live Stock Show at Chicago in December, 1911, file their bill of expense and that warrants be drawn for the amounts. Seconded by Mr. Reeves. Motion prevailed.

Mr. Johnston, chairman of the committee on per diem and mileage, presented the following report and moved its adoption. Motion prevailed and warrants were ordered drawn for the amounts named.

Mr. President: Your committee on per diem and mileage beg to report as follows:

Name	Days	Rate	Amo'nt	Miles	Amo'nt	Total	No.
C. E. Cameron	6	$ 4.00	$ 24.00	140	$ 14.00	$ 38.00	9240
O. A. Olson	6	4.00	24.00	155	15.50	39.50	9241
R. S. Johnston	6	4.00	24.00	158	15.80	39.80	9242
C. W. Phillips	6	4.00	24.00	210	21.00	45.00	9243
E. M. Reeves	6	4.00	24.00	123	12.30	36.30	9244
E. J. Curtin	6	4.00	24.00	195	19.50	43.50	9245
E. M. Wentworth	6	4.00	24.00	60	6.00	30.00	9246
T. C. Legoe	3	4.00	12.00	85	8.50	20.50	9247
C. F. Curtiss	6	4.00	24.00	37	3.70	27.30	9248
F. E. Sheldon	6	4.00	24.00	123	12.30	36.30	9249
J. F. Summers	6	4.00	24.00	160	16.00	40.00	9250
J. P. Mullen	6	4.00	24.00	117	11.70	35.70	9251
H. L. Pike	6	4.00	24.00	200	20.00	44.00	9252
						$475.90	

Respectfully submitted,

R. S. JOHNSTON,
E. M. WENTWORTH,
E. J. CURTIN.

Mr. Johnston moved that the executive committee be authorized to get an estimate on a section of the horse barn, a section of the cattle barn, a street car entrance building, and a subway under the race track, and report at the next meeting of the board. Seconded by Mr. Wentworth. Motion prevailed.

Mr. Curtiss moved that the executive committee be authorized to petition the city council for a sewer on Dean Avenue from a point on the southeast corner of the swine pavilion west to the junction of 30th Street. Seconded by Mr. Curtin. Motion prevailed.

Mr. Curtiss moved that the matter of securing bands and attractions for the 1912 fair be referred to the executive committee with power to act. Seconded by Mr. Wentworth. Motion prevailed.

Mr. Phillips moved that the matter of repairs, walks, curbing, road building and street improvement, and all unfinished business, be left to the executive committee with power to act. Seconded by Mr. Mullen. Motion prevailed.

EXECUTIVE COMMITTEE MEETING.

DECEMBER 16, 1911.

Members present: Cameron, Olson and Corey.

The committee met for the purpose of carrying out work outlined at the Board meeting.

The committee had a conference with John R. Harrigan, Manager of the Des Moines City Railway Company, and laid before him an outline of the change desired in the street car entrance at the fair grounds.

Meeting adjourned.

EXECUTIVE COMMITTEE MEETING.

JANUARY 24-27, 1912.

Members present: Cameron, Olson and Corey.

The meeting was called for the purpose of meeting a committee from the Mothers' Congress to make arrangements for a baby health contest at the 1912 fair, and to meet the officers of the Des Moines Kennel Club and make arrangements for a dog show at the 1912 fair, and to transact such other business as might come before the committee.

Secretary was instructed to execute a contract with the Des Moines Ice Company for filling the ice house on the fair grounds and selling ice on the grounds similar to last year's contract.

Secretary was authorized to contract with the Purcell Printing Company of Hampton, Iowa, for printing the premium list at $5.25 per page.

The committee met with Wm. E. Moyer and G. V. Harritt to consider the proposition for an automobile show for another year. It was agreed to enter into a contract similar to the one of 1911 for space under the amphitheater for an automobile show, the department to receive 60 per cent of the gross receipts, and secretary was authorized to execute contract.

The secretary was instructed to get out plans and specifications for the floor in the Agricultural Building, and brick floor in the Machinery Building and curbing around exhibition space in same, and to advertise for bids for the above work and material.

The committee met with Mary T. Watts, chairman of the Baby Health Contest Committee, and agreed upon the classification and prizes for the baby health contest at the 1912 Iowa State Fair:

It was also agreed that the department would furnish suitable quarters for the contest, pay the railroad fare of judges not to exceed $25.00, and pay for stationery, postage, etc., not to exceed $25.00. Mrs. Watts consented to act as Superintendent of the contest and stated that the Mothers' Congress would provide the necessary assistants and that the Iowa division of the American Medical Association would furnish judges and trained nurses to judge and care for the babies, all to serve without expense to the department.

The committee met with George M. Weaver and R. D. Lancaster, president and secretary respectively of the Greater Des Moines Kennel Club, and made a proposition for a dog show at the 1912 Iowa State Fair, to be held under the auspices of the Greater Des Moines Kennel Club.

The bill of the Underwood Typewriter Company for a new machine amounting to $70.53, and the balance due the Des Moines Electric Company amounting to $358.23, were allowed and warrants ordered drawn.

The committee visited the grounds to investigate the need of additional land east of the swine pavilion for camp grounds for the swine and sheep exhibitors, also to look over the land purchased by the Inter-state Realty Company for the department.

The secretary was instructed to draw up a contract with James H. Deemer, Superintendent of Grounds, dating same from January 1, 1912, in accordance with the resolution of the board.

The committee met with John R. Harrigan, Superintendent of the Des Moines City Railway Company, to ascertain what action the company had taken relative to the contemplated change in the street car entrance at the fair grounds. Mr. Harrigan informed the committee that the company had taken no action but would be able to give definite information by the 5th or 6th of February.

It was agreed that the executive committee and Mr. E. J. Curtin, Superintendent of Speed, attend the meeting of the Iowa, Nebraska and South Dakota Circuit and the meeting of the Northwest Iowa Fair Circuit at Sioux City January 31st and February 1st.

On motion the committee adjourned.

MEETING OF COMMITTEE ON REVISION OF PREMIUM LIST.

FEBRUARY 28, 1912.

Committee met with the following members present: Cameron, Corey, Curtiss, Pike and Johnston.

The bids for work at the fair grounds, consisting of floor in the agricultural building, floor in exhibition spaces in machinery hall, curbing and gutter on Grand avenue, being on file, it was decided that the committee open these bids before taking up the revision of the premium list.

Bids were received on the following proposals:

PROPOSAL NO. 1.

FLOOR IN AGRICULTURAL BUILDING.

The undersigned having carefully examined the plans and specifications for the proposed cement floor in the agricultural building on the Iowa State Fair and Exposition Grounds, hereby propose to furnish all materials and labor to complete said floor in accordance with specifications and instructions to bidder, for the sum of.........cents per square foot.

PROPOSAL NO. 2.

COMBINATION CURB AND GUTTER.

The undersigned having carefully examined the plans and specifications for the proposed combination curb and gutter on the Iowa State Fair and Exposition Grounds, hereby propose to furnish all materials and labor to complete curbing in accordance with specifications and instructions to the bidder for the sum of ....cents per lineal foot.

PROPOSAL NO. 3.

CURBING, MACHINERY HALL.

The undersigned having carefully examined the plans and specifications for the proposed curbing around exhibition spaces in Machinery Hall on the Iowa State Fair and Exposition Grounds, hereby propose to furnish all materials and labor to complete curbing in accordance with specifications and instructions to bidder, for the sum of.........cents per lineal foot.

PROPOSAL NO. 4.

300,000 BRICK DELIVERED TO MACHINERY HALL.

The undersigned hereby propose to furnish 300,000 sidewalk brick delivered to machinery hall on the Iowa State Fair and Exposition Grounds for the sum of $.......... per thousand. The sample brick submitted to be a fair sample of the brick we propose to furnish. Same to be delivered as per request of owner.

PROPOSAL NO. 5.

LABOR ON MACHINERY HALL.

The undersigned having carefully examined the plans and specifications for the proposed floor in machinery hall on the Iowa State Fair and Exposition Grounds propose to furnish all labor to complete floor in said building in accordance with specifications and instructions to bidder, for the sum of..........cents per lineal foot.

PROPOSAL NO. 6.

LABOR AND BRICK FOR FLOOR IN MACHINERY HALL.

The undersigned having carefully examined the plans and specifications for the proposed floor in the machinery hall on the Iowa State Fair and Exposition Grounds, hereby propose to furnish all materials and labor to complete floor in said building in accordance with specifications and instructions to bidder, for the sum of $.......... The sample of brick submitted is a fair sample of the brick we propose to use. This does not include cement curbing around exhibition spaces.

The following is the tabulated bids received on the above proposals:

Contractor's Name and Address	No. 1.—Floor in Agricultural bldg per sq. ft.	No. 2—Comb'n curb aud gutter, Grand avenue, per lineal foot	No 3—Curbing in Machinery bldg per lineal foot	No. 4—Brick for flooring Machinery bldg per M	No. 5—Labor lay'g floor Machinery bldg per sq. yd.	No. 6—Complete floor in Machinery building
Frank Ferrin, Des Moines, Iowa	7¼c	60c	26c	--------	22½c	----------
The Wagner Co., Des Moines, Iowa	6.9	48	26	--------	--------	*80.1
J. E. Lovejoy, Des Moines, Iowa	--------	--------	26	--------	--------	4,950.00
Geo. Koss, Des Moines, Iowa	7 4-7	65	30.4	--------	--------	6,699.00
Hartle & Hall, Des Moines, Iowa	8½	--------	30	--------	36	----------
McRae Construction Co., Des Moines	10½	60	30	--------	--------	----------
Bates & Thomas, Des Moines, Iowa	7.9	--------	23.9	--------	36	----------
Louis Runbeck, Des Moines, Iowa	8½	50	20	--------	--------	*81.00
Barber Asphalt Paving Co.	--------	--------	--------	$ 13.00	--------	----------
J. W. Turner Imp. Co., Des Moines, Ia.	--------	--------	--------	--------	--------	.89
Frank K. Hunt, Des Moines, Iowa	8.99	65	23	--------	--------	5,353.50
F. F. Balzer, Des Moines, Iowa	7.49	--------	--------	--------	--------	----------
Jas. A. Stanley, Des Moines, Iowa	7½	--------	--------	--------	--------	----------
Flint Brick Co., Des Moines, Iowa	--------	--------	--------	13.00	--------	----------
J. L. Hansman, Des Moines, Iowa	7.9	75	27	--------	26.2	5,600.00
Lytton-Reinking Const. Co., Des Moines	7⅜	90	33	--------	30¾	5,926.59
Nelson Bros., Des Moines, Iowa	8½	--------	--------	--------	--------	6,139.98
J. S. McLaughlin & Sons, Red Oak, Iowa	7.7	64	31	--------	--------	----------
L. J. Johnson & J. R. Potts, Des Moines	8⅜	70	24¼	--------	--------	----------
Potts Bros., Des Moines, Iowa	5½	45	16	--------	--------	†3,150.00
James Horrabin, Des Moines, Iowa	8½	75	30	--------	--------	*76.41
J. B. McGorrisk, Des Moines, Iowa	10	75	30	--------	--------	*90.00
C. E. Heaps, Moline, Ill.	--------	--------	--------	--------	--------	§9,744.00
Lindblom & Johnson, Des Moines, Iowa	05	80	20	--------	24	----------
Cook Const. Co., Des Moines, Iowa	5½	50	19½	--------	--------	5,498.00
Christie Const. Co., Des Moines, Iowa	10½	65	27½	13.00	10¼	4,585.00

*Per square yard.
†Cement brick.
§Complete all work.

After the committee had gone over the bids carefully it was evident that Potts Brothers were the lowest bidders on the combined work provided we permitted them to use cement brick in place of sidewalk brick as specified for floor in Machinery Building.

The committee decided that it would not be advisable to use the cement brick for the reason that they had no knowledge of any tests of these brick, nor did they know of any place where they had been used for a similar purpose.

Potts Brothers were called before the committee and asked to submit a proposition for a three inch cement floor in Machinery Hall, with same specifications as floor in Agricultural Building, except blocks were to be cut clear through and three feet square.

Mr. Lindblom of the firm of Lindblom and Johnson, who were low bidders on floors in Agricultural Building, was also called before the committee and asked to make a similar proposition for floor in Machinery Hall.

Potts Brothers made the following proposition:

"We will lay three-inch floor in Machinery Hall, same specifications as in Agricultural Building for 5½ cents, providing we are awarded contract for floor in Agricultural Building at the same figure and the contract for cement curbing as per our bid." Potts Bros.

Mr. Lindblom's proposition was as follows:

"Will hereby agree to build the floor in Machinery Building, furnishing the material, do the excavating, lay three-inch floor, same as in Agricultural Building, except cutting the blocks. Will cut the blocks three feet square as specified and do a first class job for the sum of .07c per square foot." Lindblom & Johnson.

The following is the summary of the two propositions on which the contract was awarded:

POTTS BROTHERS, DES MOINES, IOWA.

32,000 sq. ft. 3 in. floor in Agricultural Building at 5½c	$ 1,760.00
450 lineal ft. combination curb and gutter at 45c	202.50
65,750 sq. ft. 3 in. floor, Machinery Hall at 5½c	3,616.25
4,200 lineal ft. curbing Machinery Hall at 16c	672.00
Total for all work	$ 6,250.75

LINDBLOM & JOHNSON, DES MOINES, IOWA.

32,000 sq. ft. 3 in. floor in Agricultural Building at .05c		$ 1,600.00
450 lineal feet, combination curb and gutter at 80c		360.00
65,750 sq. ft. 3 inch floor Machinery Hall at 7c	$4,602.50	
4,200 lineal feet curbing Machinery Hall at 20c	840.00	
Cost of floor in Machinery Hall		5,442.00
Total for all work		$ 7,402.00

Potts Brothers having the low bid the committee awarded them the contract and authorized the Secretary to execute contract and bond.

REVISION OF PREMIUM LIST.

President Cameron announced the committee was now ready to take up the matter of revision of the rules and regulations and classification of the premium list for the Iowa State Fair and Exposition for 1912.

PREMIUMS OFFERED.

IOWA STATE FAIR AND EXPOSITION.

1911-1912.

	Offered by Departm't 1912	Offered by Departm't 1911	Increase by Departm't 1912	Decrease by Dep't 1912
Horses	$13,233.00	$12,957.00	$276.00	
Speed	15,250.00	14,750.00	500.00	
Cattle	11,252.00	10,595.00	657.00	
Swine	4,030.00	3,918.00	112.00	
Sheep	2,748.00	2,738.00	10.00	
Poultry	1,989.00	1,867.00	122.00	
Agriculture	4,008.00	3,586.00	422.00	
Pantry and Kitchen	828.50	567.50	261.00	
Apiary	295.00	295.00		
Dairy	657.00	657.00		
Horticulture	1,482.75	1,163.75	319.00	
Floriculture	1,279.00	1,279.00		
Fine Arts	1,869.50	1,955.50		$86.00
Work of Children	170.50	158.50	12.00	
School Exhibits	867.00	735.00	132.00	
Dog Show	1,000.00		1,000.00	
Babies' Health Contest	280.00		280.00	
Scholarships	650.00	1,000.00		350.00
Exhibit Iowa State College	800.00	800.00		
	$62,689.25	$59,022.25	$4,103.00	$436.00

EXECUTIVE COMMITTEE MEETING.

FEBRUARY 29, 1912.

Members present: Cameron and Corey.

Contracts were entered into with the following bands for engagement at the 1912 state fair: Patrick Conway Band, Syracuse, N. Y., consisting of forty pieces, including a lady soloist, for seven days, at $2,500.00; and Liberati's Band, New York City, consisting of forty-two pieces, including six grand opera singers, for seven days, at $2,520.00.

The superintendent of grounds was instructed to rent all available ground directly north of the fair grounds, to be used during the fair for plowing demonstrations and an aviation field, and put in an early crop that would not interfere with the use of the ground during the fair.

The superintendent of grounds was instructed to employ a competent engineer to set grade stakes for floor in the agricultural building. Also to lay the necessary sewer pipes to down spouts and concession booths in said building, and lay 1¼ inch water pipe necessary for flushing the floor.

Contract with the superintendent of grounds drawn by the secretary was approved.

The speed program, which had been previously discussed with Mr. Curtin, superintendent of the speed department, was adopted.

The president announced the appointment of the following standing committees for 1912:

EXECUTIVE.

C. E. Cameron
O. A. Olson
A. R. Corey

AUDITING.

C. W. Phillips
R. S. Johnston
T. C. Legoe

RESOLUTIONS.

E. M. Wentworth
F. E. Sheldon
E. J. Curtin

POWERS AND DUTIES OF BOARD.

C. E. Cameron
O. A. Olson
A. R. Corey
E. M. Reeves
C. F. Curtiss

ADULTERATION OF FOODS, SEEDS AND OTHER PRODUCTS.

E. W. Stanton
E. M. Wentworth
W. B. Barney

NOXIOUS WEEDS, FUNGUS DISEASES IN GRAINS, GRASSES, PLANTS, ETC.

E. M. Reeves
J. F. Summers
O. A. Olson

DAIRYING AND DAIRY PRODUCTS.

W. B. Barney
O. A. Olson
J. F. Summers

ANIMAL INDUSTRY.

C. F. Curtiss
H. L. Pike
J. I. Gibson

LEGISLATIVE.

C. E. Cameron
O. A. Olson
A. R. Corey
C. W. Phillips
F. E. Sheldon

REVISION OF PREMIUM LIST, RULES AND REGULATIONS.

C. E. Cameron
O. A. Olson
A. R. Corey
R. S. Johnston
C. F. Curtiss
H. L. Pike
J. P. Mullen

President Cameron instructed the secretary to write the members to the effect that there would be a meeting of the board at nine o'clock Tuesday, March 12th, to determine just what portion of the horse barn should be built this year and to transact such other business as might come before the board.

MEETING OF THE STATE BOARD OF AGRICULTURE.

MARCH 12, 1912.

Meeting was called to order by President C. E. Cameron at 10:00 a. m.

The following members responded to roll call: Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Wentworth, Legoe, Curtiss, Mullen and Pike.

Minutes of board meeting on December 15th and minutes of special committee on revision of the premium list on February 28th were read and approved.

The President announced that the purpose of the meeting was for the board to determine what permanent improvements should be made on the grounds this year in addition to those authorized by the board on December 15th, and to authorize the Executive Committee to have working plans drawn and to advertise for bids and let contract.

The secretary presented a statement of the financial condition of the treasury on March 1, 1912, showing there would be available about $20,000 from balance on hand and estimated receipts from sources other than fair up to June 1, 1912.

Also the following statement of estimated cost of improvements authorized by the board and those necessary to put the grounds and buildings in proper condition for the 1912 fair.

AUTHORIZED BY BOARD, DECEMBER 15TH.

Floor in Machinery Hall (contract let)	$ 4,288.00
Floor in Agricultural Building (contract let)	1,760.00
Combination curb and gutter (contract let)	202.50
One-half of new street car entrance	3,000.00
Purchase price of street car company's share in old entrance	750.00
Change in fence to enclose additional ground purchased (2,200 feet)	500.00

Addition to Club Dining Hall 14x30	200.00	
Shower baths and floor in room under swine pavilion, 12x76	300.00	
Due on last year's contracts	588.00	
		$ 11,588.50

ESTIMATED BUILDING REPAIRS, ETC., NECESSARY TO PUT GROUNDS IN PROPER SHAPE PRIOR TO 1912 FAIR.

Removing and rebuilding booths, tables, etc., in Agricultural Building and placing drains and water pipes under floor	$ 500.00	
Grading, cindering and improving new streets, providing new changes are made in street car entrance	1,500.00	
Two cars of road oil for streets	500.00	
Rebuilding sky lights and replacing broken glass in Machinery Hall	750.00	
Painting roof and cornice on agricultural building and painting up brick under windows	250.00	
Painting roof on Administration Building	100.00	
Painting roofs on three horse barns	150.00	
Painting cornice on amphitheater	50.00	
100 lawn seats	200.00	
Miscellaneous improvements and supplies for superintendent of grounds, chargeable to improvements and repairs not enumerated above	2,000.00	
Moving six horse barns, filling and replacing stalls, etc.	900.00	
		6,900.00
		$ 18,488.50

The Executive Committee reported the estimated cost of improvements under consideration as follows:

For one unit of cattle barns	$ 6,000.00
For one unit of horse barns	10,000.00
For cross section of horse barn, 156x224, as per plans and estimates prepared by architect, O. O. Smith, Nourse & Rasmussen:	
Mason work	4,140.00
Carpenter work	9,700.00
Sheet metal and roofing	3,080.00
Painting	495.00
Hardware	85.00
Steel work	5,500.00
	$ 23,000.00

The board decided that the logical portion of the horse barn to be built this year would be the cross section as outlined in sketch.

Mr. Curtin offered the following resolution and moved its adoption. Seconded by Mr. Curtiss:

Resolved, That the State Board of Agriculture approve the plans and sketches for the proposed cross section of the steel and brick horse barn as submitted by O. O. Smith, Nourse & Rasmussen, associated architects, and be it further

Resolved, That the Executive Committee and Mr. C. F. Curtiss be, and they are hereby authorized and instructed to have working plans made and to advertise for bids on same. And be it further

Resolved, That the Executive Committee and Mr. C. F. Curtiss be, and they are hereby authorized to award contracts for the above work to the lowest responsible bidder.

The secretary called the roll:

Those voting aye were:

Cameron, Olson, Corey, Johnston, Reeves, Curtin, Wentworth, Legoe, Curtiss, Mullen and Pike.

Those voting no—None.

Those absent—Phillips, Sheldon and Summers.

The president declared the resolution adopted.

Mr. Wentworth moved that the matter of moving all the old horse barns and installing closets and shower baths in the proposed new horse barn be left to the Executive Committee, with the recommendation that same be done if possible. Seconded by Mr. Johnston and carried.

Mr. Reeves offered the following resolution and moved its adoption:

Resolved, That no officer or employe in any department of the fair shall have any concession or privilege, or any interest or connection with any concession or privilege pertaining to the fair.

The motion prevailed.

The secretary presented an itemized statement of the cost of advertising the 1911 fair and the proposed budget for 1912.

On motion the advertising budget for 1912 was approved.

The president appointed a committee on per diem and mileage: Johnston, Wentworth and Curtin.

The committee reported as follows:

Mr. President: Your committee on per diem and mileage beg to report as follows:

Warrant No.	Name	Days	Rate	Amount	Miles	Amount	Total
9318	C. E. Cameron.....	3	$4.00	$12.00	140	$14.00	$26.00
9319	O. A. Olson........	3	4.00	12.00	155	15.50	27.50
9320	R. S. Johnston.....	3	4.00	12.00	158	15.80	27.80
9321	C. W. Phillips......	3	4.00	12.00	210	21.00	33.00
9322	Elmer M. Reeves...	3	4.00	12.00	123	12.30	24.30
9323	E. J. Curtin.......	3	4.00	12.00	195	19.50	31.50
9324	E. M. Wentworth..	3	4.00	12.00	60	6.00	18.00
9325	T. C. Legoe........	3	4.00	12.00	85	8.50	20.50
9326	Chas. F. Curtiss...	3	4.00	12.00	37	3.70	15.70
	F. E. Sheldon						
	J. F. Summers						
9327	Jno. P. Mullen.....	3	4.00	12.00	117	11.70	23.70
9328	H. L. Pike........	3	4.00	12.00	200	20.00	32.00
							$280.00

Respectfully submitted,

R. S. JOHNSTON,
E. M. WENTWORTH,
E. J. CURTIN.

On motion board adjourned to meet on call of president.

SPECIAL COMMITTEE MEETING, AUDITORIUM HOTEL, CHICAGO, ILL.

MARCH 18-20, 1912.

The special committee composed of the executive committee member, E. J. Curtin, and superintendent of privileges and concessions, Mr. W. C. Brown, met at the Auditorium Hotel in Chicago with the managers of the western state fairs for the purpose of selecting attractions and carnival company and to consider various propositions for the night show at the amphitheater.

The committee closed contract for the Nat Reese Carnival company; also signed contract for Conway's Band and Liberati's Band.

Contracts for attractions were deferred until the committee could determine on the night show for the amphitheater.

EXECUTIVE COMMITTEE MEETING.

APRIL 2-3, 1912.

Committee met with all members present; also Member Curtiss.

The committee meeting was called for the purpose of meeting with Mr. C. B. Irwin, representing the Irwin Brothers, owners of the Cheyenne Frontier Show, and to consider finally the proposition for the above show as the night attraction at the amphitheater.

After careful consideration of the proposition the committee closed contract for a consideration of $12,000.00 for six days and six nights.

Copy of contract on file.

The secretary was instructed to advertise for bids on the horse barn; said bids to be filed by 12 o'clock noon on the 3d day of May.

The secretary was authorized to contract with Mrs. Matilda Winterrowd and Miss Stella Henderson for the two ten-acre tracts directly north of the fair grounds at $9.00 per acre; the same to be put into crop and to be used for aviation field and plowing demonstrations during fair week.

On recommendation of J. F. Summers, superintendent of the poultry department, a rule was adopted and ordered printed in the rules of the Poultry Department, limiting exhibitors from outside the state from showing more than fifty birds.

The secretary was authorized to send representative on trade special run over the C., R. I. & P. and Northwestern lines from Des Moines to West Liberty and return, on the 14th, 15th and 16th of May; the expense to be $35.00 for the trip.

The secretary was instructed to submit a bid of $250.00 to the Chicago Daily Live Stock World for two Poland China Futurity Shows. One to be held at the Iowa State Fair in 1912 and one in 1913.

The superintendent of grounds was authorized to order two dump wagon boxes for use on grounds.

The committee put in a greater portion of Thursday on the grounds going over minor improvements and in determining location of old horse barns that will have to be moved in case new horse barn is built.

The secretary was authorized to start condemnation proceedings against the Patterson, Brown, Barry and Phillips and the Italian Real Estate Company properties unless an agreement between them and Mr. Harwood could be reached by the first of the week.

The committee and Professor Curtiss went over the plans and specifications for the horse barn. They instructed the architect to secure a separate bid on asbestos shingles from the Central Asbestos Supply Company of Des Moines, using Keasbey & Mattison Company shingles to furnish the material and complete the roof. They also authorized the secretary to secure a bid from the Rockford Steel Fixture Company for 126 No. 1 Standard hay racks and the same number of No. 1 Standard feed mangers. The same to be put in place by contractors.

EXECUTIVE COMMITTEE MEETING.

APRIL 10-11-12, 1912.

Committee met with all members present; also Member Curtiss.

The first estimate on cement floor in agricultural building, amounting to $600.00, was ordered paid.

The three windmill towers east of race track were condemned and the Dempster Manufacturing Company was notified to remove same.

The committee instructed the superintendent of grounds to have Potts Brothers place combination curb and gutter on east side of Rock Island avenue from Capitol avenue to northeast corner of agricultural building and on the south side of Grand avenue from street crossing west of administration building to bridge, as soon as floor is completed in agricultural building.

The superintendent was instructed to place a cement culvert across the street running north from Grand avenue west of Dodd and Struthers building. Also to make fill in space between bridge and track west of amphitheater, with a view of using same for storage of track tools.

Also to plow and level all new ground and have same properly seeded.

The matter of bidding for the National Draft Horse Breeders' Futurities opened by the Chicago Daily Live Stock World was discussed by the committee and C. F. Curtiss, superintendent of the horse department, and it was agreed that the management of the Iowa State Fair would make the Live Stock World a proposition as follows: The management of the Iowa State Fair agree to add $1,000.00 to the eight futurities for yearling draft stallions and fillies for 1912 provided the show was awarded to Iowa in 1913 and 1914 at the same figure; the Live Stock World to guarantee that the money offered in these futurities each year, not including the amount put up by the Iowa State Fair, amounts to $2,000.00 in cash.

EXECUTIVE COMMITTEE MEETING.

APRIL 23-25, 1912.

Committee met with Members Cameron and Corey present:

A conference was held with Mr. Harrigan, manager of the Des Moines City Railway Company, and Mr. Smith, who represented the Harris interest in the railway company, relative to changing the tracks and street car entrance to the grounds. The plan was thoroughly gone over and Messrs. Harrigan and Smith indicated a willingness to change the tracks providing the management of the fair would provide an adequate entrance and exit.

Committee met with all members present; also board members Mullen, Sheldon and Curtin, and Assistant Superintendent of Speed, Mr. A. L. Denio.

The committee considered the proposition submitted for the fireworks program, to be put on in connection with the Cheyenne Frontier Days in front of the amphitheater each night, by Mr. Gordon, representing the Pain Fireworks Company and Mr. Duffield, representing the Newton Duffield Company.

The Superintendent of Grounds was directed to order new fencing for enclosing new ground on south side, and twenty-six inch strip on south side of Machinery Hall; to order five barrels linseed oil and to paint roofs of all buildings except stock pavilion.

To take charge of moving Crawford House to new location on Capitol Avenue.

The space under east end of grandstand was assigned to U. S. Navy Department for their exhibit, with the understanding that we are to be to no expense for floor or enclosing same.

SPECIAL COMMITTEE MEETING.

MAY 3-5, 1912.

The committee met with the following members present: Cameron, Olson, Corey, Curtiss.

The proposal of the meeting was to open bids on the horse barn which were to be on file at twelve o'clock noon, May 4th.

The following is the form of proposal on which bids were received.

"To the Iowa State Board of Agriculture,
Des Moines, Iowa.

Gentlemen: The undersigned having carefully examined the plans and specifications for the proposed new horse barn to be erected on the Iowa State Fair Grounds, hereby propose to furnish all the materials and labor necessary in the erection and completion of all parts of the building, as per plans and specifications, not including any plumbing, electric wiring, metal feed boxes and hay racks, rolling steel doors, asbestos shingle roof, the connecting of the down spouts to sewer and the grading of the interior of the building for the sum of $..............

If the stalls in the new building are constructed of hard maple plank instead of yellow pine, 'the posts to remain oak,' add to above bid the sum of $..............

Time of completion of building August 1, 1912. Roof completed ready for asbestos shingles not later than July 22, 1912. Roof must be completed by August 15, 1912.

Enclosed find certified check for 5% on original contract price made payable to A. R. Corey, Secretary."

....

The following is a tabulation of the bids received for general contract:

Bidder	For general contract	Additional for hard maple in stalls	Total
Chas. Weitz & Sons, Des Moines	$ 21,750.00	$ 250.00	$ 22,000.00
J. B. McGorrisk, Des Moines	23,600.00	300.00	23,900.00
J. E. Lovejoy, Des Moines	20,670.00	240.00	20,910.00
Benson & Marxer, Des Moines	21,000.00	575.00	21,575.00
Jas. Maine & Sons Co., Des Moines	20,744.00	310.00	21,054.00
W. H. Brereton, Des Moines	21,000.00	325.00	21,325.00

The following proposals were received for furnishing asbestos and metal shingles and completing the main roof on barn:

Central Asbestos & Supply Co., Des Moines, Keasby & Mattison Company Asbestos Shingles	$ 4,400.00
St. John & Barquist Company, Des Moines: Johns-Mansville Asbestos Shingles	4,263.00

Cortright, 10x14 Victoria Metal Shingle	3,375.00
Cortright, 10x14 Galvanized Shingles	3,740.00
Backman Sheet Metal Works, Des Moines:	
Cortright, 10x14 metal shingles at $6.25 per square plus $140.00 for flashing valleys, etc., approximately 360 squares	2,570.00

The committee decided that inasmuch as the bids for asbestos shingles were so much in excess of those for metal shingles they would not be considered.

The proposals as tabulated above were read to all bidders present.

The committee with Mr. Rassussen, architect for Machinery Hall, and Mr. Lovejoy, general contractor for said building, visited the grounds to determine what should be done toward replacing broken skylights and re-laying drains. It was the opinion of the architect and the committee that if Mr. Lovejoy would place a 2x4 under each metal strip supporting the glass in the skylights, repair the metal frames, and replace all broken glass, they would be accepted. The drain pipes from all down spouts to be uncovered and placed at proper grade and all broken metal soil pipes to be replaced with new ones.

Mr. Lovejoy agreed to make these repairs to the satisfaction of the architect and committee at once.

The matter of letting contract for the horse barn was again taken up.

Motion was made that Mr. Lovejoy, the lowest bidder, be awarded the contract and that the secretary and architect be authorized to execute same. Motion carried. Mr. Lovejoy was called before the committee and his attention was called to a few changes that had been made on original plans which he agreed to make, if he was awarded contract, without additional cost. He also stated he would accept the proposal from the Backman Sheet Metal Works for putting on roof at their bid and would put it in with his general contract. The secretary was directed to cooperate with the architect in drawing up a contract to this effect.

The committee, with C. F. Curtiss, visited the grounds and agreed upon the location for the old horse barn, which is to be moved to make room for the new cross section of the permanent horse barn.

The committee granted the National Aviators of Des Moines the use of the Grandstand and infield on May 30th, for the usual rental of $100.00 for the day, for an aviation meet.

EXECUTIVE COMMITTEE MEETING.

MAY 15-16, 1912.

Committee met with all members present.

On Wednesday morning the committee met at the grounds at 10:00 a. m., with the Sheriff's jury selected to condemn property for addition to fair grounds.

The Sheriff's jury made the following awards:

Italian Real Estate Company:	
Lots 19-28 inclusive, Block "A" Cotton Mill Addition to Grant Park—vacant	$ 1,000.00
Mrs. Eva Brown, et al.:	
Lots 23-24-25 Block H, Redhead's Addition to Grant Park—two houses	1,500.00
Mrs. Anna Peters Barry:	
Lot 15, Block "F" Redhead's Addition to Grant Park—one house	500.00
Frank Thompson:	
For vacating 3307 Logan Avenue	10.00
To expense of sheriff's jury	39.50
	$ 3,049.50

The Secretary was directed to issue warrant for above amount and turn same over to Ben. J. Ness, Sheriff of Polk County.

The Secretary was instructed to co-operate with the Attorney General's office in preparing a petition to be presented to the city council, asking for the vacation of streets and alleys on the ground recently acquired by the state.

The following petition was presented at the regular meeting of the council at 10:00 a. m., May 17th, 1912.

PETITION.

To the Honorable Mayor and City Council of the City of Des Moines:

The undersigned respectfully request and petition your honorable body for the vacation of the following streets and alleys located in Grant Park Addition to the City of Des Moines, Iowa, to-wit:

Walnut street from the west line of Lot ten (10) in Block D to Thirty-first street;

Thirty-first street from the north line of Logan avenue to the north line of the plat of Cotton Mill Addition;

The alley in Block D from the west line of Lots ten (10) and twenty-two (22) to Thirty-first street;

All that part of Logan avenue in Redhead's Addition from Thirty-first street east to the Iowa State Fair Grounds;

All that part of Thirty-second street from the south side of Logan avenue to the north line of Dean avenue;

All of the alley in Block H, Redhead's Addition;

All of the alley in Block F from a point nine feet west of the east line of Lots nine (9) and twenty (20) in Block F to thirty-second street.

In exchange for the vacation of the above described streets and alleys, the Iowa State Board of Agriculture hereby tenders to the city of Des Moines deeds to lots nine (9) and twenty-one (21) in Block D, Cotton Mill Addition to Grant Park in the city of Des Moines.

Respectfully,
IOWA STATE BOARD OF AGRICULTURE.
Per..............................

Messrs. Olson, Wentworth and Deemer, in company with engineer, John Budd, went over the camp ground proposition and instructed Mr. Budd to lay out the main streets east and west with cross streets running north and south.

The Secretary was directed to write the Hays Pump and Planter Company, Galva, Illinois, and the Emerison-Brantingham Company, Rockford, Illinois, that their buildings had been condemned by the Executive Committee and that the same must be removed on or before the 18th of June, 1912.

The Des Moines Bridge & Iron Company was given an order to replace all inside braces on the counter balanced roof on Machinery Hall with heavier iron; the same as the five braces replaced by them and passed upon by the committee.

The committee instructed the Secretary and the Superintendent of Grounds to determine what change should be made in the drains from down spouts in Machinery Hall, and to co-operate with Mr. Lovejoy in making the change at once.

The Secretary was directed to advertise the seven houses acquired by purchase and condemnation proceedings to be sold at auction on May 31, 1912.

The Secretary was also instructed to have the insurance companies adjust damage done to dome of Exposition Building on night of May 10th.

EXECUTIVE COMMITTEE MEETING.

MAY 30, 31, June 1, 1912.

Committee met with all members present.

The purpose of this meeting was to co-operate with a committee from the Minnesota and South Dakota State Fairs in securing aeroplane attraction for the three fairs. Propositions on file were considered and a number were presented by the representatives of aviation concerns. The joint committee practically agreed upon the proposition submitted by Mr. Corrothers representing the National Aviators of Chicago for one Curtis and one Wright biplane and one Newport monoplane, each aviator to make two flights daily, for the sum of $2,800.00 for each of the three fairs; pro rata amount deducted for flights not made. The committee authorized Mr. Simpson and Mr. McIlvaine, secretaries of the Minnesota and South Dakota State Fairs respectively, to attend the aviation meet in Chicago on the 31st inst. and if the National Aviators made satisfactory flights to contract for same and duplicate contract for the Iowa State Fair.

The committee met at the grounds at 2 o'clock p. m. to attend the auction sale of houses on the ground condemned by the state for state fair purposes. The following is a list of the properties, to whom sold, and amount for which each was sold:

	Sale price
3 room house, 3030 East Walnut, Chas. Mayfield, 1012 Allen....$	99.00
4 room house, 3145 Logan, L. R. Tillotson, 1421 Maple........	72.50
4 room house, 3201 Logan, H. F. Deets, 35th and Hubbell....	100.00
3 room house, 3202 Logan, E. Clarke Campbell, 2210 E. Walnut	100.00
3 room house, 3205 Logan, Caleb Johns, 804 E. 30th St........	100.00
4 room house, 3207 Logan, H. R. Lovejoy, 836 25th St. Court..	172.00
7 room house, 3209 Logan, T. L. Sellers, 36th and Dean......	415.00
Barn, J. L. Barr..	17.00

The committee had a conference with Dr. J. I. Gibson, State Veterinarian, relative to the rule promulgated by the Animal Health Commission requiring vaccination of swine exhibited at the Iowa State Fair and the Interstate Live Stock Fair at Sioux City. An agreement was reached that inasmuch as the rule had never been approved by the Executive Council and was therefore not in force, that the same would be withheld until after these two shows. It was further agreed that the two departments would co-operate and make application to the U. S. Department of Agriculture for the services of one of the department's experts to attend the Iowa State Fair this year for the purpose of administering the vaccine to swine on exhibition providing it meets with the wishes of the exhibitors.

The committee met at the office of the Department of Agriculture with Mr. Emil G. Schmidt and Mr. J. H. Harrigan, president and general manager respectively for the Des Moines City Railway Company, for the purpose of considering the change in the street car entrance at the fair grounds.

The correspondence with Mr. C. F. Curtiss and Mr. O. J. Mooers relative to the use of one of the show horse barns and the stock pavilion by Mr. Mooers was considered. The committee agreed to grant Mr. Mooers the use of one barn at the usual rental of $1.00 per stall per month, and the use of the pavilion during rainy weather and the winter months free.

EXECUTIVE COMMITTEE MEETING.

JUNE 13, 1912.

Committee met with all members present.

The president of the Des Moines City Railway Company, Emil G. Schmidt, met with the committee to further consider changes in the street car entrance to the fair grounds.

An agreement was reached whereby the City Railway Company agreed to change their tracks providing the state fair management would give said company a twenty-five year lease on the south forty feet of lots 2 to 25 inclusive in block A and lots 10 and 22, block D, Cotton Mill Addition to Grant Park, on which to construct the necessary sidings, loop, switches and turnouts.

EXECUTIVE AND SPECIAL COMMITTEE MEETING.

JUNE 18-21, 1912.

The executive committee met with all members present, also board members Johnston, Curtin, Summers, Curtiss, and assistant superintendent of the speed department, A. L. Denio.

The following contracts were approved:

Contract with the National Aeroplane Company of Chicago for three aeroplanes.

Contract with R. R. Colwell, Mansfield, Ohio, for the score card privilege.

Contract with the Midwest Advertising Agency for publishing the official catalog.

Propositions from Iowa bands and orchestras were considered.

The committee decided to award contract for band to the Fifty-fourth Infantry Band of Ottumwa at $875.00, twenty-five musicians, for six days; and contracts for two orchestras, one to Graham's Orchestra, sixteen musicians, for five and one-half days, at $409.00, and one to the Jeffers' Concert Orchestra, sixteen musicians, six days, at $436.00. The secretary was authorized to execute contracts with the above organizations.

The secretary was directed to order 100 lawn seats from the Central Iron Works at the same price as paid last year.

Potts Bros. were authorized to place five inch concrete approach in the main entrance to the Machinery Hall at twelve cents per foot.

The various days of the 1912 fair were designated as follows:

Thursday and Friday, Aug. 22 and 23	Preparation Days
Saturday, Aug. 24	Children's Day
Sunday, Aug. 25	Music Day
Monday, Aug. 26	Des Moines Day
Tuesday, Aug. 27	Soldiers' Day
Wednesday, Aug. 28	State Day
Thursday, Aug. 29	Pioneer Day
Friday, Aug. 30	Parade Day

The executive committee and Mr. Curtiss, superintendent of the horse department, considered the proposition from Mr. O. J. Mooers of Columbia, Mo., for his saddle horse "Poetry of Motion" as an attraction for the night horse show, and the proposition of Geo. A. Heyl of Washington, Ill., for a six-horse Shetland pony team. It was agreed to offer $100.00 each for these attractions.

The secretary and the superintendent of grounds were authorized to inspect the bleachers on the Minnesota State Fair grounds and proceed with the construction of 192 feet of bleacher seats at each end of the grand stand according to sketches made by O. O. Smith and ideas gathered from an inspection of the Minnesota bleachers.

The secretary was instructed to get bids on 160 feet of street car station from the Des Moines Bridge & Iron Works and such other firms as desired to bid on same, the plan drawn by the above firm to be adopted.

EXECUTIVE COMMITTEE MEETING.

JULY 8, 9, 10, 1912.

Committee met with all members present, also Board members Legoe, Reeves, Johnston and Mullen.

Mr. Legoe, member of the Auditing Committee, examined and approved all paid bills on file.

The executive committee considered the following bids on 160 feet of the street car station; same to be built in accordance with plans and specifications submitted by the Des Moines Bridge & Iron Works:

Des Moines Bridge & Iron Works, Des Moines, Iowa:	
Building complete, including foundation	$ 3,539.00
R. T. Hartman Co., Des Moines, Iowa:	
Building complete, including foundation	3,918.00

The contract was let to the Des Moines Bridge & Iron Works on the above bid and they were instructed to proceed with the work at once.

The secretary was instructed to order 20,000 gallons of No. 4 road oil for use on the streets at the fair grounds.

Sestier Bros. of Des Moines met with the committee and agreed to enter into contract to take care of the manure from all of the barns for the entire period of the fair for $200.00, the manure to be removed in boxes that would not permit any litter over the grounds.

It was agreed that inasmuch as J. E. Lovejoy at that time had all the skylight glass for the machinery building on the ground, and there was still a balance due on the horse barn, that he be released from his bond on the machinery building.

Superintendent of grounds was instructed to make contract with the King Construction Company of Des Moines to make fill in the new horse barn, street car station, speed barn, streets, etc., at 35 cents per yard. Also to build a viaduct across the ditch at the upper turn of the track and put in a draw gate at that point. And to purchase sixty garbage cans for use in the camp grounds.

EXECUTIVE COMMITTEE MEETING.

JULY 21, 1912.

Committee met with all members present. The meeting was for the purpose of considering improvements at the fair grounds and making arrangements for the 1912 fair.

The plan for two corrugated iron doors for the driveway entrances on north side of the new horse barn was approved and secretary was authorized to place the order for same.

The changes on the switchboard as outlined by Mr. Stevenson of the Des Moines Electric Company were approved and they were authorized to go ahead with the work; the estimated cost to be between $500 and $600.

The contract with the Des Moines City Railway Company was gone over, and with the exception that it should not include lot 12 for the use of the street car company and that it should not require the management of the Iowa State Fair to furnish turnstiles for exits. With these corrections the secretary was authorized to sign same and forward it to President Cameron for his signature.

Secretary was authorized to order one thirty ton car of tan bark for use in the carriage section of the horse barn and in the stock pavilion.

Also to order six ventilators for the cross section of the horse barn.

Invitation was extended to ex-President Roosevelt, President Taft and Hon. Woodrow Wilson, through the respective national committeemen, that they be present one day during the Iowa State Fair.

The committee met with Mr. Geis Botsford, secretary of the Des Moines Commercial Club, and together called on the M. & St. L. Ry. Company, the Des Moines, Fort Dodge & Southern and the Colfax interurban companies, relative to rates during the state fair.

EXECUTIVE COMMITTEE MEETING.

JULY 30-AUGUST 3, 1912.

Committee met with all members present for the purpose of arranging daily program of the fair and going over improvements at the grounds.

EXECUTIVE COMMITTEE MEETING.

AUGUST 10-13, 1912.

Members Olson and Corey present, also board members Phillips, Mullen, Johnston, Summers, Pike and Curtiss.

All paid bills on file were audited and approved by C. W. Phillips, member of the auditing committee.

Stalls and pens were assigned by the respective superintendents.

The secretary was authorized to order seventy five patent fly traps at 75 cents each to be used on the fair ground during the fair.

The executive committee with the superintendent of grounds went over final improvements and changes to be made at the grounds before the fair opened.

Mr. O. A. Olson and Mr. F. M. Barnes of Chicago were directed to make a trip to Cheyenne to witness "Cheyenne Frontier Days" for the purpose of getting ideas which would be beneficial in reproducing the show at the Iowa State Fair.

EXECUTIVE COMMITTEE MEETING.

DURING FAIR.

The $50.00 which was allowed for premiums on seedling apples in the Horticultural Department was transferred to the Floricultural Department for the purpose of keeping up table decorations on Thursday and Friday.

Secretary was directed to issue warrant for $5,500.00 to J. E. Lovejoy, being third payment on second estimate on new horse barn.

MEETING OF STATE BOARD OF AGRICULTURE.

AUGUST 31, 1912.

Board met in the Board Room of the Administration Building at 9:30 a. m. with President Cameron in the chair. The following members responded to roll call: Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Wentworth, Legoe, Sheldon, Summers, Pike, Mullen and Gilbertson.

On motion the reading of the minutes of the last board meeting were deferred until the December meeting.

Pay rolls for the various departments were presented by the superintendents as follows:

School exhibits department	$ 204.50
Secretary's office	634.25
Press bureau	83.50
Forage department	600.50
Railroad fare, boys' camp	411.36
Dog show	364.50
Horse Department	219.50
Treasurer's department	1,457.10
Machinery department	467.35
Poultry department	263.10
Sheep department	335.50
Admissions department	2,436.50
Ticket auditing department	355.75
Floricultural department	69.00
Horticultural department	81.58
Fine arts department	477.80
Administration building employes	414.50
Ticket sellers, concession department	672.75
Privilege department	116.00
Swine department	416.87
Speed department	719.21
Police department	3,569.00
Agricultural department	380.75
Cattle department	622.05

Mr. Curtin moved that the pay rolls of the various departments as read by the secretary be approved and that the secretary be authorized to draw expense warrants for the separate amounts and deposit same to the credit of the superintendents, and that the superintendents issue pay roll checks against same in payment of pay roll. Motion seconded and carried.

Mr. Johnston moved that Mr. W. C. Brown be allowed $500.00 for expense and services as superintendent of privilege and concession department. Motion seconded and carried.

Mr. Wentworth moved that the salary of C. A. Nash, assistant secretary, be fixed at $125.00 per month, commencing with September. Motion seconded and carried.

The president appointed the following committee on per diem and mileage: Messrs. Johnston, Legoe and Summers.

Mr. Johnston presented a communication signed by one hundred and thirty-two swine exhibitors which read as follows:

"To Whom It May Concern:

We the undersigned wish to leave or be released from hog pavilion of the Iowa State Fair at prompt 4:00 o'clock p. m., Aug. 30th, instead of being held until later.

"If not released at said time do not expect us back to your fair again."

Mr. Olson moved that the communication be placed on file. Motion seconded by Mullen and carried.

The secretary presented a communication from Mary Naylor, secretary of the Women's and Children's Hospital, relative to refund of amount paid for booth in stock pavilion in which they conducted a lunch stand. Mr. Wentworth moved that the secretary notify Mary Naylor that her request could not be granted. Motion seconded and carried.

Mr. Curtin moved that A. R. Corey and G. S. Gilbertson be allowed $25.00 each to cover extra services and sundry expense during the two weeks of the fair. Motion seconded and carried.

Mr. Cameron presented in an informal manner a proposition for the board to consider before the December meeting relative to opening the fair on Thursday with a full program and releasing all exhibits Friday morning of the following week.

The committee on per diem and mileage made the following report. On motion duly seconded and carried the report of the committee was adopted and the secretary was instructed to issue expense warrants for the separate amounts:

Mr. President: Your committee on per diem and mileage beg to report as follows:

Name	Days	Rate	Amount	Miles	Amount	Total
C. E. Cameron.........	21	$4.00	$84.00	140	$14.00	$98.00
O. A. Olson...........	21	4.00	84.00	155	15.50	99.50
R. S. Johnston.........	21	4.00	84.00	158	15.80	99.80
C. W. Phillips.........	21	4.00	84.00	210	21.10	105.00
E. M. Reeves..........	21	4.00	84.00	123	12.30	100.30
E. J. Curtin...........	21	4.00	84.00	195	19.50	103.50
E. M. Wentworth......	23	4.00	92.00	60	6.00	98.00
T. C. Legoe............	21	4.00	84.00	85	8.50	92.50
C. F. Curtiss..........	21	4.00	84.00	37	3.70	87.70
F. E. Sheldon.........	21	4.00	84.00	123	12.30	96.30
J. F. Summers........	21	4.00	84.00	117	11.70	95.70
H. L. Pike.............	21	4.00	84.00	200	20.00	104.00
J. P. Mullen...........	21	4.00	84.00	118	11.80	95.80

Respectfully submitted,

R. S. JOHNSTON,
T. C. LEGOE,
J. F. SUMMERS,
Committee.

On motion the board adjourned to meet at the call of the president.

EXECUTIVE COMMITTEE MEETING.

SEPTEMBER 13-14, 1912.

Committee met with all members present.

The purpose of this meeting was to make settlement on contracts and to approve bills on file that should be paid at an early date, and to transact such other business as was brought to the attention of the commitee.

Mr. K. H. Guthrie and Mr. Bond, representing the Iowa Poultry and Pet Stock Association, appeared before the committee with a request that their association be granted the use of the poultry coops for their annual show, December 26th to January 2nd. An agreement was reached whereby they were to replace all damaged or lost coops and feeding cups, clean coops at the close of their show, receive and deliver coops at Coliseum door, and pay a rental of $150.00 for the use of same. The secretary was directed to draw up a contract to this effect.

The secretary was instructed to have the $15,000 fire and tornado insurance, now in force on the first three sections of the permanent horse barn, re-written to cover "Permanent brick horse barn," including cross section built during 1912, and to have written $5,000 additional fire and tornado insurance on said barn.

EXECUTIVE COMMITTEE MEETING.

OCTOBER 17-18.

Committee met with all members present.

A report of the case of Mrs. Eva Brown, et al, against the State of Iowa, on appeal from the award of the jury which condemned the Brown property on the 15th day of May was brought to the attention of the committee.

The trial jury allowed Mrs. Eva Brown, et al, $2,000.04 with interest at 6 per cent from May 15th, and other expenses of trial amounted to $127.05.

It was the opinion of the committee that inasmuch as the state was not allowed to introduce as evidence the amount the houses were sold for at public auction and were not permitted to show amount paid for adjoining property that an appeal should be asked for.

To this end the committee appeared before the Executive Council and asked that the case be appealed.

The claim of A. Palmer, Marshalltown, Iowa, for express charges on school exhibits from Marshalltown to Des Moines and return, amounting to $38.84, was brought to the attention of the committee. In so far as the published conditions state that freight charges will be paid on school exhibits the committee allowed a claim of $6.20, an amount equal to freight charges.

The secretary and superintendent of grounds were instructed to check up the settlement with J. E. Lovejoy, on contract for the horse barns and to go over the work carefully with the architect and see that all the work was complete.

AUDITING COMMITTEE MEETING.

OCTOBER 17-18.

The committee met with members Johnston and Legoe present.

The committee audited and approved all bills on file that had been paid since last meeting; also all unpaid bills on file.

EXECUTIVE COMMITTEE MEETING.

NOVEMBER 13, 1912.

Members present: Cameron and Corey.

The committee met with John Newburn, attorney for Eva Brown, et al, for the purpose of considering a proposition to settle the case in which the State had filed notice of appeal.

In accordance with judgment of the court rendered on or about the 4th day of October, 1912, the plaintiffs were allowed as follows:

For property	$ 2,000.04
Interest from May 15th, 6%	60.00
Costs and attorney fee	141.65
Total	$ 2,201.69

Mr. Newburn proposed that the State pay Mrs. Brown, et al, $1,800.00 and settle all cost.

The committee refused to make this settlement, but agreed to pay Mrs. Brown, et al, $1,800.00 and pay one-half the costs. This was accepted and the following stipulation of settlement was filed with the Clerk of Court and Sheriff of Polk County.

IN THE DISTRICT COURT OF THE STATE OF IOWA, IN AND FOR POLK COUNTY.

Eva Brown, Curtis H. Brown, Albert Brown, W. H. Brown and Mary A. Johnson,
Plaintiffs.
vs.
State of Iowa,
Defendant.

Law No. 21531
Stipulation of Settlement.

It is hereby stipulated and agreed by and between the plaintiffs and the defendant herein that the plaintiffs accept the sum of eighteen hundred dollars ($1,800.00) in full settlement of their claim and judgment of the court, rendered on or about the 4th day of October, 1912, in the above entitled cause. The plaintiffs further agree to pay one-half (½) of the costs, and the appeal herein taken by the defendant is hereby dismissed.

It is further agreed by the defendant that the sheriff shall pay said amount of said eighteen hundred dollars ($1,800.00) to plaintiffs less the one-half (½) of costs which he shall pay into court.

JOHN NEWBURN,
Attorney for Plaintiffs.
C. A. ROBBINS,
Attorney for State.

The $2,000.04 on deposit with the Sheriff was paid as follows:

Eva Brown, et al	$ 1,729.18
Costs paid into court	141.65
Refunded to state	129.21
	$ 2,000.04

EXECUTIVE COMMITTEE MEETING.

NOVEMBER 23, 1912.

Committee met with all members present.

The committee read each of the thirty-two essays on file on "What I Saw and Learned at the Iowa State Fair," marking them on the following basis: General description 50%, Composition 25%, What I learned 25%.

Forest H. Ford of Tipton, Iowa, received the highest markings on this basis and was awarded the trip to the State Agricultural Convention.

The program for the state farmers' institute and state agricultural convention, as presented by the secretary, was approved by the committee.

The matter of moving the present ice house on the grounds was brought to the attention of the committee; also the proposition of the Des Moines Ice Company to build a new house with the assurance that said company have the ice privilege for a period of five years on the basis of the 1912 contract. The committee agreed to this proposition and instructed the secretary to draw up contract with said company, reserving the right to take over building at any time when said company was not, in their opinion, carrying out contract for ice privilege.

The following settlement was made with Mr. J. E. Lovejoy on contract for extras for horse barn. The secretary was instructed to issue warrant for $2,000.00 on account, the balance to be arranged for at the annual meeting.

J. E. Lovejoy, Contractor,
Des Moines, Iowa.

Iowa State Board of Agriculture, Dr.

To general contract for horse barn	$ 21,050.00
Additional contract, roofing 348 squares at $6.25	2,349.00
Two pair 10x12 doors and frames, south elevation	78.00
Changing two pairs windows in front elevation	87.00

One pair doors on west, 12x16, hangers and painting..........		50.25
18 squares 3 ply Rex Flintkote roofing at $3.25................		58.50
54½ hours' time laying same at 65c..........................		35.43
Making and setting ventilator curbs..........................		6.50
43 cubic yards extra concrete under north and south main walls at $6.00		258.00
Extra time digging for additional foundation.................		17.20
Total amount contract and extras......................		$ 23,989.88
CREDITS.		
Warrant June 27	$ 5,600.00	
Warrant August 2	3,000.00	
Warrant August 10	2,500.00	
Warrant August 22	5,500.00	
Warrant September 21	3,000.00	
840 square feet cement floor omitted in future toilet rooms at .07c..............................	58.80	
18 sash furnished on south side of barn from old section	19.00	
Additional credit allowed........................	12.08	
Total credit allowed		19,689.88
Balance due on contract and extras..........		$ 4,300.00

MEETING OF THE IOWA STATE BOARD OF AGRICULTURE.

THURSDAY, DECEMBER 12, 1912.

Board convened at 9:30 a. m. with President Cameron in the chair and the following members present: Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Wentworth, Legoe, Curtiss, Sheldon, Summers, Mullen, Pike and Pearson.

Minutes of the board meetings on March 12th and August 31st and executive committee meetings were read. On motion of Mr. Wentworth, the records as read and the acts of the executive committee were approved.

On motion of Mr. Legoe the board adjourned.

The following newly elected members of the board were sworn in by H. L. Bosquet: Cameron, Olson, Phillips, Curtin, Legoe, Sheldon and Mullen.

Secretary called the roll and the following members responded: Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Wentworth, Legoe, Curtiss, Sheldon, Summers, Mullen, Pike and Pearson.

Next order of business being the election of secretary, Mr. Legoe moved that Mr. A. R. Corey be elected to succeed himself; motion seconded by Mr. Johnston. On roll call the vote resulted as follows: Aye—Cameron, Olson, Johnston, Phillips, Reeves, Curtin, Wentworth, Legoe, Curtiss, Sheldon, Summers, Mullen and Pike. Nays—None. Mr. Corey was declared duly elected member of the board for the ensuing year.

Mr. Wentworth moved that the bond of the secretary for $10,000 in the American Surety Company be approved and warrant ordered drawn for $25.00 in payment therefor; seconded by Mr. Legoe. Motion carried.

Mr. Phillips moved that Mr. G. S. Gilbertson be elected treasurer for the ensuing year to succeed himself, and that his salary be fixed at $100.00 per annum; seconded by Mr. Pike. On roll call the vote resulted as follows: Aye—Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Wentworth, Legoe, Curtiss, Sheldon, Summers, Mullen and Pike. Nays—None.

Mr. Wentworth moved that Mr. J. H. Deemer be elected superintendent of fair grounds for the ensuing year at a salary of $1200.00 per year, under terms and conditions of contract for last year. Seconded by Mr. Legoe. On roll call the members voted as follows: Ayes—Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Wentworth, Curtiss, Sheldon, Summers, Mullen and Pike. Nays—None.

Dates for the 1913 fair were discussed. Mr. Johnston moved that Wednesday and Thursday, August 20 and 21, be known as preparation days and that the fair proper open on Friday morning, August 22, and continue until Friday morning, August 29; admission fee to be 25 cents on Wednesday, the 20th, Thursday, the 21st, and Sunday, the 24th, and 50 cents for the remainder of the fair; the fair to commence with a full program on Friday, the 22nd. Mr. Curtiss offered the following amendment to the above motion: No exhibit or concession shall be removed, packed or changed in any manner, or any decorations removed, before six o'clock a. m., Friday, August 29th. The amendment was accepted and the motion seconded by Mr. Wentworth. On roll call the vote resulted as follows: Aye—Cameron, Olson, Corey, Johnston, Phillips, Reeves, Curtin, Wentworth, Curtiss, Legoe, Sheldon, Summers, Mullen and Pike. Nays—None.

Mr. Legoe moved that the details of classification, rules, etc., for the fine arts department be left to the superintendent of the department and the executive committee. Motion carried.

Mr. Phillips moved that the management of the 1913 fair be delegated to the executive committee and the elective members of the board; seconded by Mr. Reeves. Motion carried.

Secretary Corey made the following report to the board:

To the Members of the State Board of Agriculture:

The following is a summary of the financial condition of the treasury on December 1, 1912:

Balance on hand, December 1, 1911	$ 18,036.99	
Receipts other than fair	22,579.82	
Receipts of fair	185,701.21	$226,318.02
Disbursements other than fair improvements	$ 4,101.43	
Expense of fair	143,968.89	
Permanent improvements	71,056.56	
Maintenance of grounds and buildings	6,575.51	225,702.39
Balance on hand December 1, 1912		$ 615.63
Unpaid bills on file:		
J. E. Lovejoy, balance on contract	$ 2,300.00	
J. H. Queal & Co., balance on lumber bill	539.31	
John Christie Co., insurance premiums	150.00	
W. H. Brereton, brick	49.50	
Miscellaneous bills	46.83	
Total unpaid bills		$ 3,085.64
Less cash balance		615.63
Net debit		$ 2,470.01
Estimated receipts to May 1st:		
From Stallion Registration Division	$ 8,500.00	
State appropriation for insurance	1,000.00	
Other receipts	500.00	
Total estimated receipts to May 1st		$ 10,000.00
Net debit December 1, 1912	$ 2,470.01	
To estimate amount of warrants necessary to issue to May 1, 1913	7,500.00	$ 9,970.01

From the foregoing statement it would seem necessary for the board to authorize the executive committee to borrow about $3,000.00 to pay the balance due on contracts and bills on file and to carry us over until receipts from the Stallion Registration Division start coming in. I believe, with this amount, and the receipts anticipated we can manage to get along until May 1st.

This would not take into consideration any improvements the board may decide to make.

The board should at this time determine what permanent improvements we expect to ask the legislature to make appropriations for and authorize the committee to have sketches and estimates made up for the information of the Agricultural and Appropriation Committees.

A sheep barn and show ring is probably the most needed improvement at the present time and could be built at a cost of $25,000.00 or $30,000.00. A cross section of the permanent cattle barn and the completion of Machinery Hall should be considered in the list for state appropriations this year.

There is also a movement started by the women's clubs throughout the state for a women's building in keeping with the other permanent improvements on the grounds, and we will be obliged to admit there is considerable merit in their request.

We should also ask the legislature to appropriate a sufficient amount to purchase the eight lots to square out the southwest corner of the grounds and the corner where the drug store is located.

On account of the condition of our treasury any improvements made at the grounds this year will necessarily have to come from state appropriations or anticipated receipts of the 1913 fair. These, I believe, should be taken up at a board meeting after we know what the legislature is going to do in the way of appropriation.

Needed improvements that should have the attention of the board at this time or a later date, and to be made from anticipated receipts of the fair would be the completion of the street car entrance, covering ditch from machinery building to south line of grounds, installing closets in new horse barn, cement walk on south side of the street from street car station to Rock Island Avenue, and such other minor improvements as the board may deem necessary, and the general repair and maintenance of grounds and buildings must also be taken into consideration.

I also wish to call the attention of the board to the following:

Insurance expirations for 1913 will amount to $2,155.00, against $550.00 during the past year. However, they will not come due until along in September. At present we have no insurance on the amphitheater and it has been suggested that we carry $15,000 or $20,000 tornado on account of the danger by windstorm to the roof.

I would suggest if the dog show is to be continued as a feature of the fair that we appoint a superintendent for the bench show, take out a membership in the American Kennel Club, and conduct the show under our own management another year. The arrangement we had with the Des Moines Kennel Club this year did not prove satisfactory as the expense incurred was too great for conducting the show.

The automobile show could, no doubt, be handled by the superintendent of the machinery department with equal satisfaction to exhibitors and we should not anticipate any trouble in disposing of the space at the same rate. Should the rate per square foot be reduced to 25 cents we would still increase the receipts and would be making some concession to all the exhibitors.

The success of the boys' camp this year should warrant the expense for continuing the plan another year.

The babies' health contest proved such a success that it should have the support of the management again this coming year.

Copy is now ready for the report of the Stallion Registration Division and if this law is to be properly enforced the report should be placed in the hands of each stallion owner and graduate veterinarian in the state soon after the first of the year. The executive council granted the department the right to publish 4,000 copies of this report as a supplement to the Year Book, and we should have in addition to this 3,000 copies in order to supply the list referred to. These may be ordered as an additional run, without charge for the composition, and paid for out of the receipts of the Stallion Registration Division if the board so orders.

The board should at this time make appropriation for premiums for school exhibits and authorize the printing of the list, so that they may be sent out early in the school year to insure a good exhibit in this department.

I believe it would be advisable to issue 500 pamphlets containing the itemized statement of receipts and disbursements of the department for the fiscal year ending November 30, 1912, information concerning appropriations for state fairs in other states, statistics relative to the state fair, county and district fairs, farmers' institutes, etc., for the information of the legislators.

It has been suggested that the board should set aside a location for a fish and game building on the grounds and ask the Fish and Game Department to erect a permanent building thereon for housing their exhibit.

It is quite evident that some action will be taken by the legislature this winter relative to permanent road building in our state. You will recall that last session a bill was introduced asking for an appropriation of some $10,000 or $15,000 for building five miles of experimental roads in the state and it failed to pass for the reason that a majority of the house could not agree where the experiment should be carried out. No location in the state of Iowa would afford a better opportunity for inspection of roads of this sort than the state fair grounds. Should this matter come up again this winter I believe it would be well for the board to suggest this proposition to the legislature. The preliminary expense of grade and drawings has been taken care of in the permanent plans on file in this office.

The Rock Island railroad has within the past year purchased about eighty acres of ground between the Wabash tracks and their present tracks, extending from 20th to 34th street. This is to be used for transfer yards and storage tracks and will provide ample storage for cars switched to the grounds during the fair.

I understand the Rock Island officials have already promised the Commercial Club that they would provide additional platforms at the grounds and accept L. C. L. shipments from the grounds next year. However, it will be necessary for our committee to take up the matter relative to additional sidings and loading platforms for stock before another fair. The data collected from exhibitors at the close of the fair relative to the manner in which live stock shipments were handled should be sufficient to base our request for track and platform extensions. Another matter that should be looked into is the demurrage charged by the Rock Island on palace cars rented and used by our live stock exhibitors.

COMPARATIVE STATEMENT OF RECEIPTS OF 1911 AND 1912 FAIRS.

	1912	1911	Increase	Decrease
Horse department	$1,745.00	$1,729.00	$16.00	
Cattle department	988.00	1,146.00		$158.00
Sheep department	138.00	170.00		32.00
Poultry department	731.45	658.05	73.40	
Swine department	1,076.00	1,206.00		130.00
Machinery department	6,191.37	3,641.50	2,549.87	
Agricultural department	1,695.00	1,172.50	522.50	
Dairy department	1,731.85	1,036.36	695.49	
Fine Arts department	2,890.00	2,890.00		
Police department	69.90	34.75	35.15	
Concession department	23,632.85	24,182.47		549.62
Speed department	6,166.00	5,351.80	814.20	
Exhibitor's tickets	2,612.00	2,604.00	8.00	
Forage department	5,595.10	6,502.97		907.87
Association specials	4,894.46	5,092.27		197.81
Miscellaneous receipts	799.30	626.50	172.80	
Ticket sales	123,143.75	121,505.50	1,638.25	
Dog show	1,601.18		1,601.18	
	$185,701.21	$179,549.67	$8,126.84	$1,975.30

STATEMENT OF EXPENSE OF THE 1912 FAIR AS COMPARED WITH 1911.

	1912	1911	Increase	Decrease
Executive committee meetings	$938.00	$991.00		$53.00
Special committee meetings	1,211.54	1,266.04		54.50
Express, telegraph and telephone	479.28	327.95	$151.33	
Postage	1,032.16	864.50	167.66	
Printing	3,013.17	2,814.13	199.04	
Advertising	10,701.05	10,452.06	288.99	
Music and attractions	26,739.45	24,345.78	2,393.67	
Light and power	1,052.64	782.64	270.00	
Water during August	294.97	436.06		141.09
Supplies, stationery, etc.	356.08	259.48	96.60	
Forage	4,983.00	5,963.29		980.29
Salaries and clerical hire	2,290.25	2,740.75		450.50
Board meetings	280.00	645.50		365.50
Assistants and foremen (grounds)	740.20	485.54	254.56	
Scavenger work, closets, etc.	679.25	848.13		168.88
Track work	320.75	324.09		3.34
Cleaning streets, oiling, etc.	743.18	99.05	644.13	
Miscellaneous labor during fair	625.16	904.25		279.09
Cleaning buildings before and after fair	592.04	1,199.87		607.83
Cleaning grounds before and after fair	777.53	914.32		136.79
Pay roll and expense, Pres. department	512.50	453.50	59.00	
Pay roll and expense, Sec'y department	659.25	675.55		16.30
Pay roll and expense, Treas. department	1,629.10	2,006.75		377.65
Pay roll and expense, Concession dept.	1,635.45	1,530.15	105.30	
Pay roll and expense, Speed department	1,144.32	938.20	206.12	
Pay roll and expense, Horse department	1,458.10	1,245.20	212.90	
Pay roll and expense, Cattle department	930.05	1,272.15		342.10
Pay roll and expense, Swine department	575.47	610.40		34.93
Pay roll and expense, Sheep department	418.00	394.00	24.00	
Pay roll and expense, Poultry department	394.10	327.62	66.48	
Pay roll and expense, Machinery dept.	620.55	583.35	37.20	
Pay roll and expense, Agricultural dept.	583.05	597.90		14.85
Pay roll and expense, Dairy department	793.97	312.50	481.47	
Pay roll and expense, Horticultural dept.	304.14	245.59	58.55	
Pay roll and expense, Floricultural dept.	69.00	88.00		19.00
Pay roll and expense, Fine Arts dept.	581.15	590.90		9.75
Pay roll and expense, School Exhibits	219.40	254.88		35.48
Pay roll and expense, Admissions dept.	2,631.45	2,683.85		70.40
Pay roll and expense, Police department	3,964.30	3,516.01	448.29	
Pay roll and expense, Ticket department	483.25	537.25		54.00
One-half expense Iowa State College exhibit	702.73	699.04	3.69	
Expense boys' judging contest	47.00	61.46		14.46
Pay roll and exp., Women's Rest Cottage	57.75	58.15		.40
Pay roll and expense, dog show	1,196.25		1,196.25	
Expense boys' camp	1,237.83		1,237.83	
Expense Babies' Health Contest	45.33		45.33	
Plants and flowers	535.84	561.85		26.01
Freight and drayage	70.85	31.88	38.97	
Premium ribbons and badges	834.68	708.43	126.25	
Hauling manure	233.00	615.65		382.65
Miscellaneous ground supplies	296.65	218.16	78.49	
Tan bark and saw dust	149.50	223.51		74.01
Refund on admissions	9.50	50.50		41.00
Expense Iowa Pioneers' Day	131.75	167.05		35.30
Dues American Trotting Association	100.00	100.00		
Ground rental for aviation field and plowing demonstrations	175.50	70.00	105.50	
Building decorations	800.00	414.52		
Grain decorations and model farm exhibit		602.30		216.82
Placing and removing chairs, amphitheater	120.00		120.00	
Rental chairs, tents, cots, etc.	569.76	651.75		81.99
Refund special premiums not awarded	265.00	190.00	75.00	
Care water system during fair	170.00	146.73	23.27	
State Day banquet	126.25	119.55	6.70	
Coal and fireman, Adm. Bldg. and dining hall	109.07	104.59	4.48	
Miscellaneous signs	55.75	35.45	20.30	
Miscellaneous expense of fair	311.45	244.41	67.04	
	$ 85,829.74	$ 81,603.16	$9,314.49	$5,087.91
Net increase	$ 4,226.58			

COMPARISON OF PREMIUMS, 1911 AND 1912.

	1912	1911	Increase	Decrease
Horses	$ 14,940.00	$ 14,184.00	$756.00	
Cattle	11,738.00	12,061.00		$323.00
Swine	4,042.00	3,640.00	402.00	
Sheep	2,306.00	2,388.00		82.00
Poultry	1,112.50	1,042.00	70.50	
Agriculture	4,059.00	3,524.00	535.00	
Pantry and apiary	1,092.50	856.50	236.00	
Fruit	1,139.25	1,115.75	23.50	
Dairy	627.00	627.00		
Plants and flowers	1,382.40	1,278.60	103.80	
Fine arts	1,662.50	1,744.50		82.00
Schools	430.00	493.00		63.00
Scholarships	650.00	850.00		200.00
Speed department	12,360.00	12,310.00	50.00	
Auto parade		150.00		150.00
Dog show	318.00		318.00	
Babies' health contest	280.00		280.00	
	$ 58,139.15	$ 56,264.35	$ 2,774.80	$ 900.00

RECAPITULATION TICKET SALES, 1912 FAIR COMPARED WITH 1911.

	1912			1911	
	Number	Value	Total Value	Number	Total Value
General admission	136,742	$.50	$68,371.00	151,178	$75,589.00
Gen. admission after 5 p. m.	12,066	.25	3,016.50	9,161	2,290.25
Children	11,672	.25	2,918.00		
Half fare	15,313	.25	3,828.25	25,303	6,325.75
Campers	1,569	2.00	3,138.00	1,565	3,130.00
Total outside gates	183,638		$81,271.75	193,467	$87,335.00
DAY AMPHITHEATER.					
Bleachers and paddock	19,908	$.25	$4,977.00		
Quarter stretch	1,679	.25	419.75	3,109	$777.25
Reserved seats, upper half	17,101	.50	8,550.50		
Reserved seats, lower half	5,900	.75	4,432.00		
Reserved box seats	1,280	1.00	1,280.00		
Day amphitheater (at 25c)				34,106	8,526.50
Day amphitheater, reserved seats (at 50c)				12,010	6,005.25
Day amphitheater, box seats				2,090	1,567.50
Total Day Amphitheater			$19,659.25		$16,876.50
NIGHT AMPHITHEATER.					
Bleachers and paddock	29,939	$.25	$7,484.75		
Reserved seats, upper half	13,785	.50	6,892.50		
Reserved seats, lower half	5,131	.75	3,848.75		
Reserved box seats	833	1.00	833.00		
Night amphitheater (at 25c)				31,234	$7,808.50
Night amphitheater, res. seats (at 50c)				9,321	4,660.75
Night amphitheater, box seats (at 75c)				1,418	1,063.50
Total Night Amphitheater			$19,059.00		$13,532.75
STOCK PAVILION.					
Reserved seats	6,020	$.50	$3,010.00	6,603	$3,301.50
Standing room	575	.25	143.75	1,839	459.75
Total Stock Pavilion			$3,153.75		$3,761.25
Total Ticket Sales			$123,143.75		$121,505.50

$123,143.75	1912
121,505.50	1911
$ 1,638.25 Increase.	

Mr. Johnston moved that the executive committee be authorized to submit a list of superintendents for departments for the coming year. Seconded by Mr. Curtiss. Motion carried.

Mr. Curtiss moved that the executive committee be instructed to secure options or estimates necessary to secure additional lots adjoining the fair grounds, and include this in making recommendations to the legislature. Seconded by Mr. Mullen. Motion carried.

Mr. Curtiss moved that the executive committee be authorized to get an estimate on the expense of covering the ditch from the south side of the race track to the south end of the street car entrance, also from the south side of the track to the south line of the grounds, to be submitted to the board at their next meeting. Seconded by Mr. Wentworth. Motion carried.

The secretary was instructed to get an estimate on the cost of constructing the proposed subway under the race track.

Mr. Summers moved that the executive committee be instructed to have the architect draw suitable plans and make estimates for a new sheep barn, with approximately 400 pens capacity, style of architecture to be similar to the swine pavilion; recommendations for such barn to be included in recommendations to the legislature. Seconded by Mr. Johnston. Motion carried.

Mr. Mullen moved that the executive committee include in its recommendations to the legislature a request for sufficient appropriation to complete the machinery building. Seconded by Mr. Wentworth. Motion carried.

On motion of Mr. Summers the board adjourned until 1:30 p. m.

AFTERNOON SESSION.

Board convened at 1:30 with members present as at morning session.

Secretary read the report of the executive committee on appointment of superintendents of departments for 1913, as follows:

Gentlemen: The executive committee recommend the following superintendents of departments for the 1913 fair:

SUPERINTENDENTS OF DEPARTMENTS.

Transportation and Public Safety	E. M. Wentworth, State Center
Tickets	C. W. Phillips, Maquoketa
Admissions	O. A. Olson, Forest City
Concessions and Privileges	W. C. Brown, Clarion

Grounds	J. H. Deemer, Des Moines
Live Stock Sanitation	J. I. Gibson, Des Moines
Horses, Ponies and Mules	C. F. Curtiss, Ames
Speed	E. J. Curtin, Decorah
Cattle	H. L. Pike, Whiting
Swine	R. S. Johnston, Columbus Junction
Sheep	J. F. Summers, Malvern
Poultry	J. F. Summers, Malvern
Implements and Machinery	J. P. Mullen, Fonda
Agriculture	F. E. Sheldon, Mt. Ayr
Pantry Stores and Apiary	F. E. Sheldon, Mt. Ayr
Dairy	W. B. Barney, Des Moines
Horticulture	E. M. Reeves, Waverly
Floriculture	Wesley Greene, Des Moines
Fine Arts, etc.	T. C. Legoe, What Cheer
School exhibits	E. C. Bishop, Ames

On motion of Mr. Curtiss the above report was unanimously adopted.

Mr. Phillips moved that the executive committee be authorized to borrow any amount of money not to exceed $10,000.00, to be used for necessary purposes for the department until the receipts of the department provided sufficient funds, to take care of bills that demand immediate payment. Motion seconded and carried.

Mr. Curtiss moved that a committee composed of Messrs. Cameron, Curtin and Denio be authorized to investigate paddocks on other fair grounds and submit plans and estimate for a paddock at the next meeting of the board. Seconded by Mr. Johnston. Motion unanimously carried.

Mr. Wentworth moved that the executive committee be requested to take up the matter of the purchase or erection of a suitable building for men-racks for men employed in the admissions and public safety departments, and also for closets in the camp grounds as recommended in the department report. Motion seconded and carried.

Mr. Pike moved that the executive committee have plans prepared for a cross section of the cattle barn preparatory to asking for an appropriation from the legislature. Seconded by Mr. Curtiss. Motion prevailed.

The secretary read a communication from the Iowa Short Horn Breeders' Association relative to the purchase of the building on the grounds formerly owned by the Short Horn Association and now used by the fair management for a postoffice. Mr. Curtiss moved that the executive committee be authorized to purchase the building if satisfactory to the Short Horn Association, allowing them $100.00 for the building on the condition that the $100.00 be expended for cups to be offered at the fair of 1913 and succeeding years for Iowa Short Horn breeders, and that the secretary be instructed to explain to the association in regard to the building—that same had been removed and repaired at the expense of the fair and that Mr. Pike, as superintendent of the cattle department, be included on the committee making such arrangement. Motion seconded and carried.

Mr. Curtiss moved that the board contribute one-half of the expense of the Iowa State College Exhibit, not to exceed $800.00, the same as heretofore. Motion seconded and carried.

Mr. Curtiss moved that the boys' camp be continued the coming year similar to the plan followed in 1912. Motion seconded and carried.

Mr. Curtiss moved that the board authorize the printing of 3,000 additional copies of the bulletin published for the Stallion Registration Division, and that same be paid for from the fees of that division. Motion seconded and carried.

Mr. Corey recommended that 1,000 pamphlets containing a statement of expenditures of appropriations by the legislature, and information in regard to state aid to county and district fairs be issued for distribution among the legislators and for general circulation. Seconded by Mr. Summers. Motion carried.

A committee composed of Mrs. Mary T. Watts, Mrs. C. R. Brenton, and Mrs. J. C. Bennett, representing the Iowa Congress of Mothers, appeared before the board in regard to the Child's Welfare Exhibit and a permanent women's building on the grounds.

Mr. Curtiss moved that the matter of improving the facilities for loading and unloading at the Rock Island platforms at the grounds be taken up by the executive committee and the superintendent of transportation. Motion seconded and carried.

Mr. Curtiss moved that the board indorse the movement for a women's building on the fair grounds, and that the women's committee be asked to have plans of the building put in form and secure an estimate of the cost of same from an architect. Seconded by Mr. Johnston. Motion carried.

Mr. Johnston moved that the executive committee be authorized to co-operate in every way possible toward furnishing a suitable place on the fair grounds for the building of permanent roads for demonstration. Seconded by Mr. Curtiss. Motion carried.

Mr. Wentworth moved that the executive committee and Mr. Curtiss be requested to work out plans along the line suggested by Mr. Curtiss in regard to farm contests and for a publicity man for the department. Seconded by Mr. Pike. Motion carried.

On motion of Mr. Mullen the board adjourned until 9:00 a. m., Friday, the 13th.

MEETING OF STATE BOARD OF AGRICULTURE.

FRIDAY, DECEMBER 13, 1912.

Board convened at 9:30 a. m. with the following members present: Cameron, Olson, Corey, Johnston, Phillips, Reeves, Wentworth, Sheldon, Summers, Mullen and Pike.

Minutes of the board meeting on Thursday, the 12th, were read and approved.

Revision of classification for premium list and reports of superintendents was next taken up.

Mr. Pike made a verbal report of the cattle department; also recommendation for changes in premium list.

Mr. Johnston made report of the swine department as follows:

To the State Board of Agriculture:

Gentlemen: The swine department of the Iowa State Fair for 1912 was up to the high standard of past years. While the capacity of the building was not required, yet a formidable display was on hand, both as to quality and number. Only twice in the nine years that I have acted as superintendent of this department have we had more room than required; the past year being one of them, at which time there was a total of 1,076 pens paid for out of a total number of 1,154 in the building. The swine show at the Iowa State Fair ranks very high and it is understood generally that if you win at Iowa you can win anywhere.

The wants of the swine people are well supplied. As you are fully aware, the swine building in itself is all that can be desired. We have the popular classification and offer as much, or more, money as any other fair. The comfort and sanitary conditions of the building are almost perfect. Only one improvement seems to be needed and that is an arrangement of sun shades at such portions of the building as are badly affected by the rays of the sun from three to six o'clock P. M. While the morning sun is somewhat to be dreaded it is not so much feared as the afternoon sun. We would recommend that the fair board look after this improvement before another fair.

This year the management was kind enough to install baths, both for the hogs and the attendants. Three wash basins were installed on the inside square of the building, much to the satisfaction of the exhibitors. Shower baths were installed in the show pavilion and at once became popular with exhibitors and herdsmen. This, we believe, was the only place on the grounds where free baths could be had. A much needed improvement in these would be some way to heat the water. With the improvements this year we should claim the swine interests almost perfectly cared for so far as equipment goes.

A wide spread of disease, not only in Iowa but in surrounding states, no doubt kept many away from the fair. While no cure for swine plague or cholera has been found, we are convinced from personal experience that the serum treatment is the nearest cure yet discovered and we would urge the Iowa Department of Agriculture to pass suitable resolutions asking the next legislature to make a liberal appropriation for the manufacturing of serum. At the present time the facilities and means for manufacturing this serum are not such that the serum can be had many times when needed.

It is a well known fact that swine are brought to the fair for show and for sale; the sale stuff often times not being as creditable as we would wish, but we are loath to discourage this feature of the show as it brings many people to the fair and encourages the breeding of pure bred hogs.

It seems there must always be something to worry the superintendent and at the present time it is the selection of judges in the Poland China and Duroc Jersey classes. The fight among the Poland China breeders is in regard to the medium and large type features; both have some merit and we believe will ultimately terminate in much good to both.

Summing up the swine department, we would consider the exhibitors well satisfied in every branch of the show and would pronounce it almost as nearly perfect as a department can be made.

Mr. Johnston moved the adoption of the following rule in regard to vaccination of hogs:

"All animals will be inspected by a veterinarian upon arrival at the grounds and those that have not been vaccinated within thirty (30) days prior to the fair will be treated with serum for prevention of disease."

The motion was seconded by Mr. Wentworth and unanimously adopted.

Mr. Sheldon made a report of the agricultural department.

Mr. Reeves moved that all concessions in the agricultural building be put in charge of the superintendent of the agricultural department. Seconded by Mr. Olson. Motion prevailed.

Mr. Summers made the following report of the poultry department:

To the State Board of Agriculture:

Gentlemen: The poultry department in common with most of the other departments of the state fair showed a satisfactory increase in the number of exhibits shown as well as the interest taken in the affairs of the department by the exhibitors and the public.

The plan of excluding the carlot or huckster exhibitors inaugurated last year proved to be a great success. In spite of the fact that the unfavorable poultry season has caused a shrinkage in the size of all poultry shows during this season our exhibits at the state fair were increased by nearly 200 birds. This we believe is the result of the encouragement offered to legitimate breeders. The income of the department was also substantially increased over that of 1911. Both the egg laying contest and the egg show attracted much attention and proved to be valuable as an educational feature of the poultry department.

In looking forward to this year's fair I would call your attention to the urgent necessity for more exhibition coops as the exhibits have outgrown the present cooping capacity. With these added facilities the poultry department will keep pace with the other departments of the Iowa State Fair.

It would receive the most hearty approval of the poultrymen of the state if arrangements could be made whereby several inexpensive silver cups could be awarded to sweepstakes winners; thus definitely designating certain Iowa State Fair champions in the poultry department as in several of the other live stock departments. Such trophies need not be expensive as the honor more than the pecuniary value will be considered by the winners.

Mr. Summers moved that the following recommendations be approved and adopted: To offer cups for sweepstakes cockerel and pullet for the four distinct strains: American, Asiatic, Mediterranean and English; also that additional coops be placed in the poultry building before the 1913 fair. Motion seconded and carried.

Mr. Mullen, superintendent of the machinery department, made the following report and recommendations:

To the State Board of Agriculture:

Gentlemen: I would respectfully recommend that the re-letting of space by exhibitors, either in the buildings, for which they claim ownership, or the outside space owned by the fair association, should be strictly prohibited and notification of that fact be included in each and every contract.

I would also recommend that one sprinkler be set aside for the use of the machinery department, to be used in machinery hall and the streets running through the machinery exhibits. This could be taken care of by the men who furnish steam and gasoline engines with water.

I also believe there should be a limit to the amount of space assigned to each outside exhibitor; also that there should be more definite arrangements made for exhibitors to secure electric power to run their machinery, and an easier method of obtaining it from the officers of the electric light company.

It is the opinion of the machinery department officials that the automobile exhibit should be directly under the management, and in charge of the machinery department; also the price of space for the automobile exhibit under the amphitheater should be 25c per square foot.

Mr. Mullen recommended that the nominal charge of $1.00 be made for outside space and that contract be written for such space. On motion of Mr. Mullen the above report and recommendations were adopted.

Mr. Reeves made report of the horticultural department as follows:

To the State Board of Agriculture:

Gentlemen: In reporting the outcome of the fruit department at the 1912 fair I can say that it was a decided success. The fruit crop was small over most of the state and it took an unusual amount of work to secure the exhibits, but they came from all districts although the southern was poorly represented. The distance their exhibits have to come and the consequent expense, together with a poor crop, was the reason given for their failure to show. They, together with exhibitors from other parts of the state, claim that they are poorer paid for their efforts and for the benefit they are to the fair than any other department exhibitors. One man who helped in putting up an exhibit said that it did not pay. While they brought three wagon loads of fruit and it took the time of three men to place and care for their fruit, they also brought some corn in a suitcase and handed it to an attendant and received about the same in premiums from each department. By increasing the premium list each year we have been able to secure a good showing so far. However, its seems that we must soon face the necessity of doubling the premiums to hold the old exhibitors who have made this department so attractive for the past years and to secure the new ones who must take the place of those who yearly drop from our list.

There was this year fully the usual number of plates of fruit shown and of a higher quality. The management insisting on a high quality to secure the awards has had the desired effect and as a rule none but good fruit is shown, which is a decided advance over the practice a few years ago. On account of a poor crop Mr. C. G. Patton did not show his seedling apples but the many inquiries for them showed the interest of the public in his valuable work.

Mr. B. A. Mathews showed about seventy varieties and being constantly on hand to answer questions has created quite an interest in the growing of fruit in the state.

The new feature was the box exhibit of apples. While this was largely made by the department as an object lesson, there were good exhibits by growers and an interest has been aroused by the efforts of the past three years that will not only insure good box exhibits in the future but cause growers to market their choicest grades in better shape as is done in the west.

The box packing school received much attention from exhibitors and visitors and this should be continued. However, as we now have trained experts in the state it will not be necessary to send to Hood River for a teacher for this work.

The fruit department would show to better advantage if it could all be placed on one floor. Having a part in the galleries does not give the best impression to visitors and is inconvenient in many ways.

The new cement floor in the building called for much praise from all and is a decided improvement in cleanliness and caring for the exhibits. A place in which to store empty boxes during the fair is much needed in this department and the enclosing of a room in each of the two south corners of the gallery might be made to serve this and the agricultural department while they jointly occupy the building.

Mr. Wentworth made the following report of the public safety and transportation departments:

To the State Board of Agriculture:

Gentlemen: The steady growth of the Iowa State Fair has been well shown through the reports of the various officers and superintendents But, to me, it is especially noticeable through the requisitions made upon this department.

In 1911 we had a total of one hundred forty-four men; one hundred twenty-seven foot, fifteen mounted, the chief and assistant chief, with an aggregate of 1,023 days' service. In 1912 we had one hundred sixty-three men; one hundred thirty-seven foot, twenty-four mounted, the chief and assistant chief, with an aggregate of 1,201 days' service.

The early installation of exhibits and policing of the camp grounds required the services of eleven men before the fair actually opened and we were required to hold a number of the men several days after its close. In order to keep the expenses at a minimum it is our practice to request the men to report on different days. As a result fifty did not enter the service until after Sunday. Fifteen of them working the three big days only, while twenty-two worked ten days or more.

The department endeavored this year to distribute as broadly as consistent the appointments; some seventy counties having representation. Eighteen of our men this season were regular police in their home towns and I would here express my appreciation to the mayors of those towns for their courtesy in granting us such services.

The camp ground is steadily growing in popular favor, 1,598 tents, by actual count, being reported from the camp headquarters, which also estimated 6,500 people actually taking advantage of the opportunities afforded and I feel the figures are conservative.

I regarded myself as particularly fortunate to secure the services of Mr. W. H. Walker, formerly general agent of the Rock Island Lines, Des Moines, as assistant in the Transportation Department. His complete familiarity with all conditions made him especially useful to the exhibitors who were warm in their expressions of appreciation for aid received.

The demand for buildings and accommodations for exhibitors has been so persistent that the department has not been able to give the attention to quarters for employes that they not only deserve but have a right to expect. We have been favored by well-nigh perfect weather the past two years, otherwise the tents would not have been at all satisfactory, and I hereby recommend the purchase or erection of a suitable building with accommodations for two hundred men, as it will not be five years before the proper protection of exhibits and grounds will require such a force. A new barn for the horses of the mounted police is an immediate and absolute necessity and must be provided before another fair.

I would urge the attention of the board to the matter of wages and recommend an increase of fifty cents per day for both the mounted and foot men. It has been particularly difficult to get men with good mounts at the wages allowed, for by the time the freight, the feed bills and their own board is paid, they find it hard to break even.

The question of uniform is worthy of consideration and I hope to interest the board in the matter later.

The growing popularity of the camp grounds is making additional demands for sanitation and I recommend two new closets to be built near the eastern end of the grounds, and that the old closets be rebuilt with such changes in location as may best serve the interests and conveniences of the patrons.

On motion the board adjourned until 1:30 p. m.

AFTERNOON SESSION.

Board convened at 1:30 with the following members present: Cameron, Olson, Corey, Johnston, Phillips, Reeves, Wentworth, Summers, Mullen and Pike.

The secretary read the following communication from Mr. W. C. Brown:

Des Moines, Iowa, Dec. 13, 1912.

To the Board of Directors, Officers and Managers of the Iowa State Fair and Department of Agriculture:

Gentlemen: I desire to thank you for the appointment to the position of Superintendent of Privileges and Concessions, but having been elected treasurer of state at the recent election it will not be possible for me to accept the appointment.

Thanking you for past favors and courtesies, I beg to remain,

Sincerely yours,

W. C. BROWN.

Mr. Wentworth moved that the resignation be accepted and that the secretary tender to Mr. Brown the thanks of the board for the long, efficient and faithful service he has given the fair. Motion seconded by Mr. Olson and unanimously carried.

Mr. Mullen moved that the executive committee make the selection of a superintendent of privileges and concessions to succeed Mr. Brown. Motion accepted by Mr. Pike and carried.

The president appointed as committee on per diem and mileage Messrs. Johnston, Summers and Pike.

Secretary read the report of the superintendent of the school exhibits department as follows:

To the State Board of Agriculture:

Gentlemen: The school exhibits department has shown a wonderful growth since its organization. The effects of this exhibit, as a stimulus to better work and right direction in public education, is very evident in many parts of the state where schools have participated one or more years by making an exhibit.

While comparatively small percentage of Iowa's 28,000 school teachers can be present at the state fair, a great number of leaders in education are present for one or more days, either in connection with the care of exhibits from their schools, or as individuals interested in seeing and knowing more of the work represented in the educational exhibits and other departments of the state fair.

A surprisingly large number of teachers obtain permission for at least a day off from their regular duties and visit the educational exhibit. The number of school pupils who actually file through the aisles, observing their own work and that of other school children, mounted and displayed in an attractive way, is very large in the aggregate during the session of the fair.

The information these people receive from observing good school work and the inspiration which comes to them from a proper recognition of such work has an influence reaching back into the home school district, which is most productive of good in supplementing the efforts of teachers and school administrators to direct school activities in the right way.

The expressed appreciation of school patrons who visit the exhibit and the attitude of those interested in public school education generally is a sufficient recognition of the value of the school department exhibit, and provides a very strong reason for increasing its effectiveness. The work of building up a sentiment favorable to this exhibit among teachers, superintendents and others who contribute to its success, has been well done, and we are now ready for a further development, which will mean much to the state of Iowa in the way of giving direction and encouragement to public school work.

From my experience with the education exhibit since its origin, and from my observations of what can be done along this line, I am pleased to submit the following recommendations relative to this department for the ensuing year:

MORE EXHIBIT SPACE NEEDED.

1. The crowded condition of the exhibit last year and the demand for space was such that it appears that one of two policies would be advisable for next year.

(a) To increase the amount of exhibit space sufficiently to properly display the exhibits which will be offered, or,

(b) To limit the size, amount and character of exhibits which will be accepted.

The educational exhibit could well occupy a space at least four or five times as large as that occupied last year. I believe that the development of the educational exhibit is sufficient recognition of its value and that if the same could be provided, a separate building for the school exhibit department, where there could be sufficient room and light for displaying in the right way such exhibits as would be offered, such action would be entirely justified, and appreciated by those concerned.

If further room cannot be provided, it is my opinion that the number of classes or the number of exhibits under the different classes should be reduced sufficiently to provide for a proper display of the exhibits which are offered.

On the other hand, there are a number of good things in education which, in my opinion, ought to be provided for in the state educational exhibit but which cannot be provided for unless further exhibit space can be secured. These will be mentioned under separate heading in this report.

REVISION OF PREMIUM LIST.

2. A study of the premiums awarded the past year indicates that 140 premiums which were offered were not awarded. In most cases the reason of failure to award premiums was because of no exhibits being made for the particular premiums. In some cases exhibits were not offered because of a lack of room for properly displaying the exhibits called for. In other cases it appears that the exhibits called for were not such as the schools find it convenient to make. I recommend that a careful examination of the premium list be made and that where premiums are offered for exhibits which it appears are not likely to be made, that such be modified so as to call for those things which are most likely to be supplied by the schools.

ADDITION TO PREMIUM LIST.

3. One feature of school work which will receive special emphasis the ensuing year, and for which I believe an excellent showing could be made at the state fair, is that of Iowa Boys' and Girls' Club work, especially the gardening and canning club work, which could be organized for exhibit purposes very effectively. The exhibit could be made largely by clubs or by individuals, and if properly displayed, ought to make a good drawing card at the fair. These exhibits made in some of the southern and eastern states last year were very attractive features. If space can be provided for this purpose and premiums offered for such exhibits, I am sure from our membership of 14,000 young people we could get a display that would be a credit to the state fair and to the work of the schools.

In addition to the general classes for exhibits by schools, I believe that some arrangement of other special classes could be made by which schools which are not in position to make a representative general exhibit would make a special feature exhibit of particular phases of the work which are being handled by their particular schools. If exhibit space will permit, I believe it very desirable that a larger number of schools be induced to participate by arranging an exhibit in some particular line, without reference to any other work. This would allow each school to compete in a division in which it is especially prepared to make an exhibit, and would permit of a greater representation of schools and a better specialization of exhibits in display. I believe that a strong emphasis should be placed upon exhibits of work in agriculture, domestic science and manual training, and that inducements ought to be offered which will bring exhibitors in these lines from a greater number of schools.

EARLY ISSUE OF PREMIUM LIST.

4. The school work exhibited at the state fair is prepared almost entirely during the school year ending about June 1st. A great proportion of the work should be that which is done during the year. Unless teachers are expecting to make an exhibit, in most cases, the work of the pupils which might well contribute to such an exhibit is not preserved to the end of the year in a condition which would justify its exhibition. The exhibit necessarily must be planned during the school year. If the premium list for the education department could be issued in pamphlet form about the first of the year, it would enable schools to make better representations of their work.

LECTURES AND DEMONSTRATIONS.

5. As a drawing feature of value, I believe that a series of educational lectures and demonstrations could be arranged with very little expense, where at certain times each day people interested in the subjects announced could come for a brief period and listen to lectures and witness demonstrations in educational lines which would be of value. I am quite sure that the series of lectures could be arranged for if a suitable space for an audience of limited size could be provided. It need not be a large space, but should be easily accessible.

In the demonstration work, I believe it would be possible to arrange each day to have in operation one of the garden and tomato canning clubs which we are now organizing, where the regular work would be carried out, the young people taking the fruit or vegetable as they come from the garden or orchard, preparing them for canning, and completing the work by sealing the cans, labeling them and presenting them for inspection, use or marketing.

If your board favors this idea I shall be pleased to contribute any services which I am able in carrying it out. We are now working under the co-operative arrangement with the department of agriculture in these courses and expect to have sufficient help to facilitate the work in every county in the state. If any of the above recommendations seem worthy of attention and you desire anything further as to detail in application of any one of them, I am at your service for whatever I may be able to do in furthering the interests of the work.

Very truly yours,

E. C. BISHOP.

Mr. Johnston moved that the appropriation in the school exhibits department be the same as in 1912, and that the recommendations and classification be left to the secretary and the superintendent of the department. Motion seconded and carried.

Mr. Johnston moved that the matter of music and attractions for the 1913 fair, and all unfinished business, be delegated to the executive committee with power to act. Seconded by Mr. Wentworth. Motion carried.

The committee on per diem and mileage filed the following report, which, on motion of Mr. Johnston, was adopted and warrants ordered drawn for the various amounts:

Mr. President: Your committee on per diem and mileage beg to report as follows:

Name	Days	Rate	Amount	Miles	Amount	Total
C. E. Cameron.........	6	$4.00	$24.00	140	$14.00	$38.00
O. A. Olson...........	6	4.00	24.00	155	15.50	39.50
R. S. Johnston.........	6	4.00	24.00	158	15.80	39.80
C. W. Phillips.........	6	4.00	24.00	210	21.00	45.00
E. M. Reeves...........	6	4.00	24.00	123	12.30	36.30
E. J. Curtin............	5	4.00	20.00	195	19.50	39.50
E. M. Wentworth.......	6	4.00	24.00	60	6.00	30.00
T. C. Legoe............	5	4.00	20.00	85	8.50	28.50
C. F. Curtiss..........	5	4.00	20.00	37	3.70	23.70
F. E. Sheldon..........	6	4.00	24.00	123	12.30	36.30
J. F. Summers.........	6	4.00	24.00	160	16.00	40.00
J. P. Mullen...........	6	4.00	24.00	117	11.70	35.70
H. L. Pike.............	6	4.00	24.00	200	20.00	44.00
						$476.30

Respectfully submitted,
R. S. JOHNSTON,
H. L. PIKE,
J. F. SUMMERS,
Committee.

Mr. Wesley Greene, superintendent of the floricultural department, made a verbal report of that department.

Mr. Wentworth moved that the matter of approval of the bond of the treasurer be referred to the executive committee with power to act.

On motion of Mr. Summers, seconded by Mr. Pike, the board adjourned.

A View of One Portion of the Iowa State Fair Grounds During 1912 Fair.

PART VII

PROCEEDINGS

OF THE

State Agricultural Convention

WEDNESDAY, DECEMBER 11, 1912.

The convention was called to order at 10:00 A. M. by Mr. C. E. Cameron, president of the Iowa State Board of Agriculture. Mr. O. A. Olson, vice-president, presided while President Cameron delivered the following address:

PRESIDENT'S ADDRESS.

C. E. CAMERON, ALTA, IOWA.

Again we meet for the Fifty-eighth Annual Meeting of the Department of Agriculture of Iowa. It is with pleasure I welcome you to this meeting. It is a source of gratification to the officers of the department to meet you, especially this year after the successful fair of 1912.

It would be difficult for me to single out any department and tell you the success of the fair was due to that one department. Iowa has the reputation of having the best balanced fair in the United States, and I think she is justly entitled to that distinction; hence it shows that her departments are on a parity with each other. Why should not Iowa have the greatest fair in the United States, or, for that matter, in the world? Iowa is recognized as the greatest agricultural state in the Union, then why not the greatest fair, situated in the most fertile valley, taken as a whole, that has as yet been found and inhabited by a class of people as intelligent and progressive as are to be found on the face of the globe.

The fair this year did not come up to our expectations in attendance. In the last five years the attendance has increased from 216,000 in 1907 to 271,000 in 1911, and this year we had only a little over one thousand increase over the attendance of 1911. The average increase per year for the last five years was 11,000, or a total of 55,000 in that time. Never in the history of the fair had a better program been prepared, the departments were all well filled, premiums had been increased in all departments, and we had great faith that the increased attendance per year according to the last five years would be shattered. Some of us even had our minds on the 300,000 mark. Prospects never looked brighter, never in the history of the state have there been better crops, prices have been good, and the people are prosperous. Then what was the trouble? To my mind the trouble was with the railroads. For over twenty years, with the exception of one year, the railroads have granted a three cent round trip rate to the fair, and we expected the same this year up to three weeks before the fair. We could not, as we have done for twenty years, advertise a reduced rate to the fair. The patrons of the fair, especially those from a distance, say, "Well, no rates this year. Guess I will not go." This did not make so much difference to the people living within a radius of forty or fifty miles from the fair. As I have said time and again, I would rather have the attendance of one person who lives one hundred miles from the fair than three who live only forty or fifty miles distant, for those who live the long distance when they come will stay three or four days, while those who come the short distance will come in the morning and return home that night. We have tried in every conceivable way to show the railroads of the state that our interests are mutual. We are building up the resources of the state, and when we do that we build up every industry in the state; and there is no one industry that is more benefited by the upbuilding of this state's great resources than the railroads. Then why should they not be co-workers with us in building up this great educational institution. We had a meeting in Chicago last October with the members of the Western Passenger Association to lay before them that the future success of these great fairs depends largely upon what the railroads are going to do. This meeting was attended from Iowa by Clifford Thorne, State Railroad Commissioner, Geis Botsford, Secretary of the Des Moines Commercial Club, H. W. Byers, city corporation counsel for Des Moines, A. R. Corey, Secretary of the State Fair, and myself. And I want to say right here that in matters where the interests of the state fair are at stake you can always depend upon the city of Des Moines doing her part. We had a very agreeable meeting in Chicago; they treated us very nicely and heard our side of the story—and, in fact, that is the only side you will hear. They are the best listeners I have ever met. They simply said they would take the matter up and let us know later. I feel that we have a good case; and if the railroads are not willing to do something to help along a cause that is helping them, then I think it would be within the power of the legislature to put in the hands of the railroad commission of this state authority to deal with just such cases.

I will not go into the details of the last fair, as our Secretary, Mr. Corey, will give you a complete statement of the receipts and disbursements. There was expended for permanent improvements on the grounds the last year something like $71,000.00, all out of the profits of the fair for the last two years—a new cross section of the horse barn, a street car station, cement floor in the agricultural and machinery buildings, new speed barns, cement walks and gutters. The Des Moines City Railway Company treated the fair very nicely this year by moving their tracks to the new location at a cost of twelve thousand dollars, while they still had ten years of the old lease to run. The land purchased from the appropriation by the last legislature opened up some very desirable ground; in fact, it looked as if a new fair had started in the southwest part of the grounds. This relieved the congestion we have always had in the center of the grounds.

We did more this year to carry out the line of future permanent improvement as planned by Mr. Simonds, the landscape architect, than any year since the plan was adopted, and I am more than satisfied with the general arrangements as suggested by Mr. Simonds. The Board made no mistake when they ordered this work done; they know now just where every permanent building should be located.

New buildings that should be given consideration for the next year are a sheep barn, a cattle barn and the south half of the new machinery building. The exhibitors in the machinery building are so well pleased with it that, so I am informed by the superintendent of that department, every exhibitor of this year has engaged the same space for 1913 and hundreds of exhibitors who were unable to get space in the building have applied for space next year. With the final completion of the buildings as marked out by the landscape architect, walks all covered from the transportation stations to all the permanent buildings, Oh, what a dream of an ideal fairground.

The President then appointed the following committees:

Committee on Credentials.

C. W. Hoffman	Decatur County.
James Nowak	Poweshiek County.
H. C. Leach	Davis County.

Committee on Resolutions.

T. W. Purcell	Franklin County.
John W. Palm	Henry County.
A. G. Rigby	Buchanan County.

The Secretary's report was then read by Mr. A. R. Corey.

SECRETARY'S REPORT.

A. R. COREY, DES MOINES, IOWA.

Speaking from an agricultural standpoint, the year 1912 is destined to make history for the State of Iowa. There is no question in our mind what the report of Dr. Chappel, Director of the Iowa Weather and Crop Service, will show when given to the public. We have already noticed that the government estimates the corn production in Iowa for this year at 432,000,000 bushels, an increase of 44,000,000 bushels over the banner year, 1906. In addition to this we have had individual reports from practically every section of the state indicating bounteous yields of corn, wheat, oats, and all other farm products. Along with these unprecedented yields the farmers are receiving fair prices for their products. This is not only true with agricultural products, but for beef, pork, butter, eggs and other products of the farm. This has not only resulted in the prosperous condition of our farmers, but it is responsible for a noticeable demand for Iowa land at prices considerably advanced over a year ago. When the Iowa farmer prospers so do all industries, and this year is no exception and finds them in a flourishing condition.

FARMERS' INSTITUTES AND SHORT COURSES.

In the seventy-seven counties of the State in which farmers' institutes were held during the period from July 1, 1911, to June 1, 1912, ninety-one institutes were held and received state aid to the amount of $5,646.36. The reports indicate that the communities in which these institutes were held contributed in the way of subscription, membership fees, etc., $17,288.35 for additional support.

The total attendance of all institutes was 159,080, or an average of 1,750 each, and a total of 692 sessions were held with an average attendence of 225 at each. This would indicate these institutes are well attended and are the means of bringing together a large number of farmers seeking information that will better agricultural conditions in our State.

The principal disbursements were for premiums on live stock, agricultural products and for the products of domestic science, which amounted to $9,881.55; for judges, speakers and instructors, $4,106.80; for hall rent, printing, advertising and miscellaneous expense, $7,468.23.

By the co-operation of short course associations throughout the state and the Agricultural Extension Department at Ames, a number of short courses were held. These meetings are not reported to this department, except in counties where no institutes or county or district fairs are held and they are allowed to draw the state aid due these organizations. Eleven short course associations took advantage of this and drew state aid to the amount of $1,371.24. Allamakee, Harrison, Kossuth, Mitchell, Winnebago and Worth counties drew state aid due institutes. Cherokee, Dallas and Plymouth drew state aid due county and district fairs. Ida and Washington drew aid due both institute and fair.

The short courses reporting to this department held 275 sessions with a total attendance of 52,045, or an average of 190 per session. They expended for premiums $4,704.55; for speakers, judges and instructors, $2,616.16; for hall rent, printing and miscellaneous expense, $8,467.93. In addition to the state aid and free instructors from the Extension Department, the local associations raised $15,203.83 for additional support for their short courses.

In addition to these short courses and institutes a number of colt shows were held in various counties. All of these gatherings offer opportunity for interchange of ideas and have a tendency toward the betterment of agricultural production, live stock raising, and farm life, and should be encouraged by support from the state. To the Extension Department at Ames great credit is due for promoting these courses and for the speakers and instructors furnished.

The following tables give detailed information for each farmers' institute and short course association drawing state aid. They show the number of sessions held by each, total attendance, amount of state aid received and a statement of receipts and disbursements for the fiscal year ending June 30, 1912.

FINANCIAL STATEMENT OF COUNTY FARMERS' INSTITUTES IN IOWA.

FOR FISCAL YEAR JULY 1, 1911, TO JUNE 1, 1912.

Number	COUNTIES	Number Sessions	Total Attendance	RECEIPTS				DISBURSEMENTS				Balance on hand	Overdraft	Number
				Cash on hand	Miscellaneous Receipts	State Aid	Total Receipts	Speakers and Judges	Premiums	Miscellaneous Expense	Total Disbursements			
1	Adair	7	1,000	----------	----------	$ 75.00	$ 75.00	$ 29.24	$ 24.56	$ 23.20	$ 77.00	----------	$ 2.00	1
2	Adams	4	600	$ 15.95	----------	52.07	68.02	32.67	4.00	15.40	52.07	$ 15.95	----------	2
3	Appanoose	24	7,800	302.01	$ 1,000.63	75.00	1,377.64	21.54	451.70	429.90	903.14	474.50	----------	3
4	Benton	7	375	109.42	254.42	75.00	438.84	18.70	64.00	182.92	265.62	173.22	----------	4
5	Black Hawk	7	800	5.80	----------	62.00	67.80	46.95	----------	15.05	62.00	5.80	----------	5
6	Boone	10	4,640	193.15	527.20	75.00	795.35	57.64	377.88	237.23	672.75	122.60	----------	6
7	Bremer	10	2,625	----------	51.15	75.00	126.15	42.55	22.00	61.60	126.15	----------	----------	7
8	Buchanan	7	2,200	.69	67.60	75.00	143.29	28.25	33.00	34.95	96.20	47.09	----------	8
9	Buena Vista	30	3,700	101.73	1,264.50	75.00	1,441.23	120.27	704.20	296.93	1,121.40	319.83	----------	9
10	Butler	5	1,800	33.90	68.06	75.00	176.96	21.87	63.06	60.02	144.95	32.01	----------	10
11	Calhoun	7	1,280	125.24	48.25	75.00	248.49	40.01	54.75	40.50	135.26	113.23	----------	11
12	Carroll	7	1,500	80.93	35.50	75.00	191.43	20.68	99.00	35.85	155.53	35.90	----------	12
13	Cedar	6	575	52.90	39.15	75.00	167.05	52.66	37.00	26.80	116.46	50.59	----------	13
14	Cerro Gordo	8	800	----------	----------	75.00	75.00	25.54	10.00	39.46	75.00	----------	----------	14
15	Cherokee	8	1,600	120.54	109.35	75.00	304.89	44.50	92.95	54.85	192.30	112.59	----------	15
16	Chickasaw	11	1,335	13.65	51.00	75.00	139.65	45.40	24.00	61.69	131.09	8.56	----------	16
17	Clay	3	1,800	159.16	324.65	75.00	558.81	7.00	196.90	93.80	297.70	261.11	----------	17
18	Clayton	6	1,000	----------	94.45	75.00	169.45	54.89	72.50	25.78	153.17	16.28	----------	18
19	Clinton	10	3,400	9.31	720.43	75.00	804.74	52.29	453.15	290.55	795.99	8.75	----------	19
20	Dallas	4	650	30.67	50.00	75.00	155.67	26.23	57.00	9.49	92.72	62.95	----------	20
21	Davis	7	3,500	77.33	415.86	75.00	568.19	64.31	306.85	71.40	442.56	125.63	----------	21
22	Decatur	6	1,200	----------	----------	67.80	67.80	29.02	----------	38.78	67.80	----------	----------	22
23	Delaware	9	2,450	----------	208.37	75.00	283.37	63.91	90.00	129.46	283.37	----------	----------	23
24	Dickinson	10	5,700	170.01	526.85	75.00	771.86	73.82	102.00	391.20	567.02	204.84	----------	24
25	Dubuque	11	1,800	29.55	102.50	75.00	207.05	78.06	61.65	62.00	201.71	5.34	----------	25
26	Fremont	6	1,200	----------	144.35	75.00	219.35	37.00	144.35	35.88	217.23	2.12	----------	26
27	Greene	5	2,000	----------	300.55	75.00	375.55	25.00	196.00	154.55	375.55	----------	----------	27
28	Grundy	7	1,250	----------	190.20	75.00	265 20	65.95	139.25	60.00	265.20	----------	----------	28
29	Guthrie	7	1,200	40.55	113.25	75.00	228.80	45.75	22.50	89.04	157.29	71.51	----------	29
30	Hamilton	7	1,000	28.00	97.50	75.00	200.50	63.00	105.75	23.75	192.50	8.00	----------	30

FINANCIAL STATEMENT OF COUNTY FARMERS' INSTITUTES IN IOWA—CONTINUED

FOR FISCAL YEAR JULY 1, 1911, TO JUNE 1, 1912.

Number	COUNTIES	Number Sessions	Total Attendance	RECEIPTS				DISBURSEMENTS				Balance on hand	Overdraft	Number
				Cash on hand	Miscellaneous Receipts	State Aid	Total Receipts	Speakers and Judges	Premiums	Miscellaneous Expense	Total Disbursements			
31	Hancock	6	1,575	9.66		64.85	74.51	2.50	30.00	32.35	64.85	9.66		31
32	Hardin	6	800	29.65	141.58	75.00	246.23	3.50	27.50	56.26	87.26	158.97		32
33	Henry	5	200	6.15	227.55	75.00	308.70	43.18	128.50	31.01	202.69	106.01		33
34	Howard	8	1,500			75.00	75.00	48.60	12.75	13.65	75.00			34
35	Humboldt	24	6,100	90.17	950.85	75.00	1,116.02	293.93	213.92	409.36	917.21	198.81		35
36	Iowa	30	3,700		1,012.65	75.00	1,087.65	255.72	281.70	373.73	911.15	176.50		36
37	Jackson	4	800	3.75	84.00	74.74	162.49	23.54	84.00	51.20	158.74	3.75		37
38	Jasper	10	3,425		10.00	62.10	72.10	23.10		39.00	62.10	10.00		38
39	Jefferson	10	1,000	109.00	90.00	75.00	274.00	42.97		83.45	126.42	147.58		39
40	Johnson	6	800	19.30	409.50	75.00	503.80	75.37	234.50	107.22	417.09	86.71		40
41	Keokuk	8	1,750		140.45	75.00	215.45	102.78	82.22	65.00	250.00		34.55	41
42	Lee	5	1,500	68.52	216.05	75.00	359.57	33.18	180.00	54.00	267.18	92.39		42
43	Linn	15	2,050	40.63	149.92	75.00	265.55	94.21	15.00	140.48	249.69	15.86		43
44	Louisa	5	1,500			64.00	64.00	17.75		46.25	64.00			44
45	Lucas	13	500	6.68	50.00	51.28	107.96	35.58	55.00	10.70	101.28	6.68		45
46	Lyon	9	400	.50	153.15	75.00	228.65	45.00	25.00	167.49	237.49		8.84	46
47	Madison	5	1,600	50.09	27.20	75.00	152.29	24.93	42.00	8.66	75.59	76.70		47
48	Mahaska	5	1,500	397.03	36.75	75.00	508.78	22.00	30.00	36.05	88.05	420.73		48
49	Marion	8	3,000		35.00	75.00	110.00	17.00	49.00	64.00	130.00		20.00	49
50	Marshall	4	500		50.00	75.00	125.00	45.00	35.00	21.00	101.00	24.00		50
51	Mills	8	1,800		50.00	75.00	125.00	29.00	50.00	32.40	111.40	13.60		51
52	Monona	6	1,500	36.77	189.30	75.00	301.07	30.91	174.00	81.15	286.06	15.01		52
53	Monroe	8	1,900	183.32	60.75	75.00	319.07	16.05	170.00	120.00	306.05	13.02		53
54	Montgomery	6	1,000		175.50	75.00	250.50	65.91	175.50	27.21	268.62		18.12	54
55	Muscatine	6	500	13.48	23.33	74.52	111.33	48.17	36.00	26.35	110.52	.81		55
56	O'Brien	11	2,600	140.40	307.15	75.00	522.55	116.00	76.00	186.85	378.85	143.70		56
57	Page	8	3,600	1.86	755.00	75.00	831.86	210.00	530.00	91.86	831.86			57
58	Palo Alto	10	2,700	40.25	226.55	75.00	341.80	50.00	137.16	54.50	241.66	100.14		58
59	Plymouth	6	500		395.40	75.00	470.40	50.25	157.50	169.90	377.65	92.75		59
60	Pocahontas	10	4,200	95.45	142.85	75.00	313.30	62.30	56.00	80.45	198.75	114.55		60
61	Polk	32	5,250	178.66	1,671.81	75.00	1,925.47	188.30	1,112.15	269.87	1,570.32	355.15		61

62	Poweshiek	8	2,400	2.43	256.00	75.00	333.43	24.97	39.35	163.68	228.00	105.43	----------	62
63	Ringgold	6	700	10.00	64.45	53.00	127.45	7.50	----------	45.50	53.00	74.45	----------	63
64	Sac	9	2,300	313.00	330.89	75.00	718.89	63.68	288.75	239.46	591.89	127.00	----------	64
65	Scott	9	6,325	48.20	272.15	75.00	395.35	75.94	184.00	66.39	326.33	69.02	----------	65
66	Shelby	4	1,000	----------	85.50	75.00	160.50	38.33	9.45	100.87	148.65	11.85	----------	66
67	Sioux	7	4,150	----------	126.88	75.00	201.88	----------	20.75	181.13	201.88	----------	----------	67
68	Story	4	1,200	57.31	260.31	75.00	392.62	24.59	192.50	48.45	265.54	127.08	----------	68
69	Tama	9	1,800	40.00	22.75	75.00	137.75	24.48	70.00	30.37	124.85	12.90	----------	69
70	Taylor	15	4,000	----------	72.14	75.00	147.14	75.52	54.00	22.25	151.77	----------	4.63	70
71	Union	7	2,200	47.25	119.25	75.00	241.50	24.62	87.50	98.98	211.10	30.40	----------	71
72	Van Buren	20	3,600	1.85	----------	75.00	76.85	10.80	----------	64.30	75.10	1.75	----------	72
73	Wapello	18	1,275	39.74	564.70	75.00	679.44	89.32	375.75	138.41	603.48	75.96	----------	73
74	Warren	4	1,000	271.54	109.80	75.00	456.34	32.85	72.50	22.35	127.70	328.64	----------	74
75	Wayne	12	5,300	94.17	217.97	75.00	387.14	56.27	171.60	40.41	268.28	118.86	----------	75
76	Winneshiek	4	500	----------	----------	70.00	70.00	50.00	----------	20.00	70.00	----------	----------	76
77	Woodbury	3	800	95.33	197.50	75.00	367.83	56.50	105.00	142.25	303.75	64.08	----------	77
	Total	692	159,080	$ 4,242.63	$17,288.35	$ 5,646.36	$27,177.34	$ 4,106.80	$ 9,881.55	$ 7,468.23	$21,456.58	$ 5,808.90	$ 88.14	

FINANCIAL STATEMENT OF SHORT COURSE ASSOCIATIONS OF IOWA.

FOR YEAR ENDING JUNE 1, 1912

1	Allamakee	28	4,500	$ 465.39	$ 1,500.55	$ 75.00	$ 2,040.94	$ 291.61	$ 298.75	$ 809.81	$ 1,400.17	$ 640.77	----------	1
2	Cherokee	18	2,500	277.21	808.80	134.80	1,220.81	357.00	337.00	475.81	1,169.81	51.00	----------	2
3	Dallas	35	5,875	----------	1,155.90	200.00	1,355.90	266.47	841.15	232.39	1,340.01	15.89	----------	3
4	Harrison	27	6,230	----------	1,369.10	75.00	1,444.10	237.53	332.00	448.98	1,018.51	425.59	----------	4
5	Ida	17	3,200	86.72	665.89	196.60	949.21	150.63	224.50	658.35	1,033.48	----------	$ 84.27	5
6	Kossuth	18	5,040	----------	820.00	75.00	895.00	251.70	132.00	489.65	873.35	21.65	----------	6
7	Mitchell	24	4,000	64.64	1,464.64	75.00	1,604.28	357.02	574.05	516.05	1,447.12	157.16	----------	7
8	Plymouth	25	2,700	----------	2,439.75	200.00	2,639.75	294.99	800.00	1,620.77	2,715.76	----------	76.01	8
9	Washington	14	6,000	98.91	970.15	189.84	1,258.90	330.39	289.10	571.66	1,191.15	67.75	----------	9
10	Winnebago	44	8,500	----------	2,511.30	75.00	2,586.30	78.82	176.00	1,650.83	1,905.65	680.65	----------	10
11	Worth	25	3,500	923.23	1,497.75	75.00	2,495.98	----------	700.00	993.63	1,693.63	802.35	----------	11
	Total	275	52,045	$ 1,916.10	$15,203.83	$ 1,371.24	$18,491.17	$ 2,616.16	$ 4,704.55	$ 8,467.93	$15,788.64	$ 2,862.81	$ 160.28	

COUNTY AND DISTRICT FAIRS.

Ninety-four county and district fairs located in seventy-six counties of the state reported to this department and received state aid in the sum of $20,860.32. This is an increase of $389.00 over the aggregate amount paid last year. The average amount paid each fair was $222.00 or about $10.00 less than last year. The total receipts from all sources were $511,885.00, an increase of $62,154.00 over last year and an average of $5,445.00 for each fair.

There was disbursed for premiums other than speed $86,697.00, or an average of $922.00 for each. This is an average of $48.00 less than was paid last year. Speed premiums amounted to $108,188.00, or an average of $1,228.00, an increase per fair of $48.00 over last year. Other items make a total of expenditudes of $497,639.00, or an average disbursement of $5,294.00 for each fair.

Sixty-two fairs show a cash balance on hand of $24,777.00, while thirty report overdrafts amounting to $10,531.00. The ninety-one properties are valued at $950,115.00, or an average valuation of $10,440.00. Three fairs report that grounds are leased. The indebtedness reported totals $174,699.00, an increase of $31,108.00 over last year. The net assets total $789,661.00, or an average of $8,677.00 for each fair.

The attendance for the ninety-four fairs was 892,299, or an average of 9,490. This is an increase of 61,468 over last year, or an average increase of about three hundred for each fair.

The following is a list of eight fairs that paid premiums other than speed in excess of $1,500.00 and drew the maximum amount of state aid, $300.00:

Interstate Live Stock Fair	Sioux City	$8,353.85
Marshall County Fair	Marshalltown	3,161.50
North Iowa Fair	Mason City	3,047.45
Bremer County Fair	Waverly	2,851.79
Henry County Fair	Mt. Pleasant	2,410.28
Buchanan County Fair	Independence	2,259.66
Union District Fair	West Liberty	2,190.50
Columbus Junction District Fair	Columbus Junction	1,517.16

The following tables have been tabulated, giving detailed information relative to each county and district fair in Iowa.

The first table is a financial statement showing receipts and disbursments, state appropriation, profit and loss on 1912 fair, and assets and liabilities of each fair.

The table following the financial statement gives total attendance admission fees charged at outside gates, grand stand, and quarter stretch for the year 1912.

Interior View of Agricultural Building at 1912 Iowa State Fair.

1912 FINANCIAL STATEMENT OF COUNTY AND DIS

Number	COUNTY OR DISTRICT	Balance on hand	Receipts		
			Misc. Receipts	State Aid	Total
1	Adair, Greenfield		$ 1,416.95	$ 198.84	$ 1,615.79
2	Adams, Corning	$ 174.00	3,051.84	218.20	3,444.04
3	Allamakee, Waukon		3,625.26	204.10	3,829.36
4	Audubon. Audubon	1,858.25	3,285.15	220.00	5,363.40
5	Benton, Vinton		4,905.00	209.28	5,114.28
6	Boone, Ogden		3,881.20	214.84	4,096.04
7	Boone, Boone	39.35	3,885.20	202.95	4,127.50
8	Bremer, Waverly		13,017.50	300.00	13,317.50
9	Buchanan, Independence	15.26	8,538.74	300.00	8,854.00
10	Buena Vista, Alta	4.28	5,227.48	239.27	5,471.03
11	Butler, Allison	9.71	3,873.07	211.89	4,094.67
12	Calhoun, Manson		4,109.91	248.47	4,358.38
13	Calhoun, Rockwell City	67.75	3,508.14	237.45	3,813.34
14	Carroll, Carroll		4,047.48	160.20	4,207.68
15	Cass, Atlantic	1,219.58	6,789.45	290.29	8,299.32
16	Cass, Massena	1,095.29	2,186.95	215.20	3,497.44
17	Cedar, Tipton		3,783.63	272.93	4,056.56
18	Cerro Gordo, Mason City		15,242.92	300.00	15,542.92
19	Chickasaw, New Hampton	40.00	4,534.65	200.90	4,775.55
20	Chickasaw, Nashua	52.60	4,335.51	253.38	4,641.49
21	Clayton, National	8.66	2,606.20	224.33	2,839.19
22	Clayton, Strawberry Point	202.79	3,219.84	208.70	3,631.33
23	Clayton, Elkader		2,670.95	222.33	2,893.28
24	Clinton, De Witt	569.19	8,142.75	291.15	9,003.09
25	Crawford, Arion	428.93	2,314.61	201.11	2,944.65
26	Davis, De Witt	341.25	4,073.60	256.45	4,671.30
27	Delaware, Manchester		906.00	171.20	1,077.20
28	Dickinson, Spirit Lake	5.14	1,374.01	163.34	1,542.49
29	Dickinson, Milford		889.40	109.30	998.70
30	Fayette, West Union	65.84	5,590.35	226.70	5,882.89
31	Fayette, Oelwein	259.60	1,492.11	194.26	1,945.97
32	Franklin, Hampton	194.75	5,029.76	233.00	5,457.51
33	Greene, Jefferson		17,286.59	257.77	17,544.36
34	Grundy, Grundy Center	1,054.17	2,377.27	206.39	3,637.83
35	Guthrie, Guthrie Center		2,114.20	160.00	2,274.20
36	Hancock, Britt		2,715.74	226.20	2,941.94
37	Hardin, Eldora		5,642.35	278.53	5,920.88
38	Harrison, Missouri Valley		735.70	168.50	904.20
39	Henry, Mt. Pleasant		9,180.28	300.00	9,480.28
40	Henry, Winfield		3,502.30	211.15	3,713.45
41	Humboldt, Humboldt		2,739.66	178.48	2,918.14
42	Iowa, Marengo		1,602.27	207.81	1,810.08
43	Iowa, Victor	555.03	2,110.75	114.20	2,779.98
44	Iowa, Williamsburg	39.19	1,869.32	206.39	2,114.90
45	Jackson, Maquoketa	17.02	4,675.05	246.62	4,938.69
46	Jasper, Newton	678.51	6,478.48	267.79	7,424.78
47	Jefferson, Fairfield		3,112.60	204.89	3,317.49
48	Johnson, Iowa City	649.78	3,033.05	203.35	3,886.18
49	Jones, Anamosa	1.29	7,012.10	216.78	7,230.17
50	Keokuk, What Cheer	37.07	2,941.95	232.75	3,211.77
51	Kossuth, Algona	158.36	6,382.00	262.20	6,802.56
52	Lee, Donnellson	225.00	2,398.22	122.56	2,745.78
53	Lee, West Point	13.56	2,711.84	204.59	2,929.99
54	Linn, Marion		2,802.68	233.55	3,036.23
55	Linn, Central City		3,447.87	263.50	3,711.37
56	Louisa, Columbus Junction	173.54	5,186.99	300.00	5,660.53
57	Lyon, Rock Rapids	3,264.35	8,838.16	255.45	12,357.96
58	Madison, Winterset		1,595.15	235.92	1,831.07
59	Mahaska, New Sharon	264.39	2,593.60	214.64	3,072.63
60	Marion, Pella	93.37	1,833.35	207.50	2,134.22
61	Marshall, Rhodes	54.84	943.90	167.96	1,166.70
62	Marshall, Marshalltown	698.79	11,502.02	300.00	12,500.81
63	Mills, Malvern		3,987.55	227.91	4,215.46
64	Mitchell, Osage	978.64	2,494.05	233.25	3,705.94
65	Monona, Onawa	28.57	1,633.50	220.75	1,882.82
66	Monroe, Albia		3,528.08	239.50	3,767.58

TRICT FAIRS IN IOWA RECEIVING STATE AID 1912

Disbursements				Profit and Loss		Assets and Liabilities		
Misc. Expense	Speed Premiums	Other Premiums	Total	Balance Nov. 1, 1912	Overdraft	Value of property	Indebtedness	Number
$ *1,927.97	$ 455.00	$ 473.10	$ 2,856.07	----------	$ 1,240.28	$ 8,000.00	$ 2,000.00	1
1,458.54	1,085.00	682.00	3,225.54	$ 218.50	----------	10,000.00	----------	2
2,280.66	920.00	541.00	3,741.66	87.70	----------	7,500.00	----------	3
3,144.80	813.00	700.05	4,657.85	705.55	----------	7,000.00	----------	4
2,421.08	1,845.00	603.86	4,869.94	244.34	----------	8,000.00	2,500.00	5
1,572.78	1,800.00	648.45	4,021.23	74.81	----------	8,500.00	4,668.28	6
2,357.79	1,790.00	529.50	4,677.29	----------	549.79	10,000.00	1,500.00	7
8,573.24	1,850.70	2,851.79	13,275.73	41.77	----------	16,000.00	----------	8
5,203.38	986.00	2,259.66	8,449.04	404.96	----------	10,000.00	1,500.00	9
2,572.18	1,742.50	892.75	5,207.43	263.60	----------	8,000.00	1,800.00	10
2,377.65	1,087.00	618.95	4,083.60	11.07	----------	3,500.00	750.00	11
2,439.59	1,682.50	984.75	5,106.84	----------	748.46	5,900.00	2,715.27	12
1,100.00	2,765.00	874.55	4,739.55	----------	926.21	12,500.00	2,500.00	13
2,396.98	1,250.00	400.50	4,047.48	160.20	----------	6,000.00	1,825.56	14
5,605.03	1,522.75	1,402.90	8,530.68	----------	231.36	25,000.00	----------	15
1,418.94	597.70	652.00	2,668.64	828.80	----------	2,000.00	----------	16
1,893.47	288.00	1,229.30	3,410.77	645.79	----------	11,000.00	1,000.00	17
10,577.60	1,905.75	3,047.45	15,530.80	12.12	----------	24,781.39	7,015.00	18
1,857.78	1,875.00	509.00	4,241.78	533.77	----------	5,000.00	----------	19
3,321.83	265.50	1,033.85	4,621.18	20.31	----------	8,500.00	3,200.00	20
2,111.04	242.31	743.30	3,096.65	----------	257.46	3,500.00	1,275.00	21
2,542.40	260.75	587.00	3,390.15	241.18	----------	5,000.00	200.00	22
1,366.08	870.00	723.30	2,959.38	----------	66.10	8,000.00	5,380.00	23
4,537.18	1,910.00	1,411.50	7,858.68	1,144.41	----------	7,500.00	----------	24
1,569.16	555.00	511.15	2,635.31	309.34	----------	1,500.00	----------	25
1,919.58	1,510.35	1,064.50	4,494.43	176.87	----------	15,000.00	1,500.00	26
890.00	125.00	428.00	1,443.00	----------	365.80	7,000.00	3,440.00	27
462.80	656.25	408.35	1,527.40	15.09	----------	7,000.00	5,000.00	28
215.00	995.00	273.25	1,483.25	----------	484.55	2,000.00	700.00	29
3,920.60	750.00	767.05	5,437.65	445.24	----------	15,000.00	----------	30
1,489.95	295.00	485.65	2,270.60	----------	324.63	2,000.00	957.00	31
3,586.94	775.50	830.00	5,192.44	265.07	----------	6,500.00	3,500.00	32
14,470.84	1,587.55	1,077.70	17,136.09	408.27	----------	11,134.49	3,250.00	33
2,301.22	190.00	563.92	3,055.14	582.69	----------	8,500.00	----------	34
1,158.20	556.00	400.00	2,114.20	160.00	----------	7,000.00	1,200.00	35
1,525.00	850.00	762.00	3,137.00	----------	195.06	5,000.00	1,000.00	36
3,157.45	1,506.75	1,285.30	5,949.50	----------	28.62	15,000.00	----------	37
778.17	200.00	421.25	1,399.42	----------	495.22	10,000.00	250.00	38
2,120.00	3,200.00	2,410.28	7,730.28	1,750.00	----------	16,000.00	----------	39
1,492.85	1,600.00	611.50	3,704.35	9.10	----------	10,000.00	1,250.00	40
1,764.03	400.00	446.20	2,610.23	307.91	----------	3,000.00	700.00	41
1,142.64	375.00	578.10	2,095.74	----------	285.66	5,000.00	2,000.00	42
1,231.42	754.50	285.50	2,271.42	508.56	----------	4,500.00	1,000.00	43
1,406.15	----------	563.90	1,970.05	144.85	----------	7,000.00	2,311.63	44
2,077.41	1,835.00	966.25	4,878.66	60.03	----------	10,000.00	3,560.00	45
3,938.47	1,422.50	1,177.94	6,538.91	885.87	----------	19,000.00	2,800.00	46
1,505.39	670.00	548.90	2,724.29	593.20	----------	12,000.00	2,700.00	47
1,877.13	1,230.00	533.50	3,640.63	245.55	----------	18,000.00	6,200.00	48
4,991.18	1,546.34	667.85	7,205.37	24.80	----------	12,000.00	4,000.00	49
1,250.91	1,173.35	827.50	3,251.76	----------	39.99	7,500.00	----------	50
4,346.95	1,275.00	1,122.00	6,743.95	58.61	----------	20,000.00	3,900.00	51
1,435.63	1,003.75	306.40	2,745.78	----------	----------	2,000.00	----------	52
1,678.85	685.00	545.90	2,909.75	20.24	----------	5,000.00	2,190.00	53
1,315.59	994.00	835.55	3,145.14	----------	108.91	8,600.00	5,500.00	54
2,377.43	----------	1,135.00	3,512.43	198.94	----------	10,000.00	2,600.00	55
2,851.47	990.00	1,517.16	5,358.63	301.90	----------	8,000.00	4,000.00	56
6,804.77	2,792.50	1,054.50	10,651.77	1,706.19	----------	25,000.00	----------	57
1,672.35	115.00	859.25	2,646.60	----------	815.53	6,000.00	3,500.00	58
1,354.34	878.27	646.44	2,879.05	193.58	----------	6,000.00	----------	59
1,097.47	550.00	575.05	2,222.52	----------	88.30	8,000.00	2,000.00	60
832.54	----------	419.90	1,252.44	----------	85.74	2,500.00	----------	61
6,585.77	2,286.70	3,161.50	12,033.97	466.84	----------	20,000.00	----------	62
1,685.81	1,970.00	779.15	4,434.96	----------	219.50	10,000.00	8,000.00	63
3,160.00	132.50	832.50	4,125.00	----------	419.06	5,000.00	400.00	64
965.25	210.00	707.50	1,882.75	.07	----------	8,000.00	3,000.00	65
1,680.84	1,450.00	895.00	4,025.84	----------	258.26	†	850.00	66

1912 FINANCIAL STATEMENT OF COUNTY AND DISTRICT

Number	COUNTY OR DISTRICT	Balance on hand	Receipts		
			Misc. Receipts	State Aid	Total
67	Montgomery, Red Oak		2,977.50	228.86	3,206.36
68	Muscatine, West Liberty	664.93	7,005.50	300.00	7,970.43
69	Muscatine, Wilton Junction	987.96	3,645.29	219.10	4,852.35
70	O'Brien, Sutherland		2,132.80	205.15	2,337.95
71	O'Brien, Sheldon	144.43	6,606.20	221.65	6,972.28
72	Page, Clarinda		8,557.91	237.52	8,795.43
73	Page, Shenandoah	32.29	7,582.26	288.25	7,902.80
74	Pocahontas, Fonda	633.18	7,429.66	219.27	8,282.11
75	Pottawattamie, Avoca		3,163.71	243.45	3,407.16
76	Poweshiek, Malcom	60.87	2,602.35	204.27	2,867.49
77	Poweshiek, Grinnell	45.62	3,884.00	225.96	4,155.58
78	Ringgold, Tingley	.85	317.75	222.40	541.00
79	Sac. Sac City	1,427.62	5,534.25	218.45	7,180.32
80	Shelby, Harlan	91.43	6,080.13	243.08	6,414.64
81	Sioux, Orange City	133.78	2,000.55	181.90	2,316.23
82	Story, Ames		1,380.14	218.25	1,598.39
83	Tama, Toledo		3,184.10	234.48	3,418.58
84	Van Buren, Milton	131.00	2,830.75	201.07	3,162.82
85	Wapello, Eldon		3,960.38	208.00	4,168.38
86	Warren, Indianola		4,176.99	258.50	4,435.49
87	Wayne, Sewal	53.46	876.30	36.50	966.26
88	Webster, Ft. Dodge	300.00	2,896.05	158.90	3,354.95
89	Winnebago, Forest City		5,954.92	208.09	6,163.01
90	Winneshiek, Decorah	22.00	1,886.66	203.60	2,112.26
91	Woodbury, Moville	343.27	2,970.85	211.45	3,525.57
92	Woodbury, Sioux City	8,413.74	73,907.39	300.00	82,021.13
93	Worth, Northwood	329.54	2,143.95	179.05	2,652.54
94	Wright, Clarion		3,318.70	206.18	3,524.88
	Total 1912	$ 29,453.66	$ 461,571.27	$ 20,860.32	$ 511,885.25
	For comparison, 1911	$ 30,865.13	$ 398,394.87	$ 20,471.58	$ 449,731.58

*Overdraft of 1911 included.

†Grounds leased.

FAIRS IN IOWA RECEIVING STATE AID, 1912—CONTINUED

Disbursements				Profit and Loss		Assets and Liabilities		
Misc. Expense	Speed Premiums	Other Premiums	Total	Balance Nov. 1, 1912	Overdraft	Value of property	Indebtedness	Number
2,214.45	1,040.00	788.60	4,043.05	----------	836.69	8,500.00	4,296.00	67
2,863.18	1,855.00	2,190.50	6,908.68	1,061.75	----------	6,000.00	------------	68
1,575.19	1,490.00	691.00	3,756.19	1,096.16	----------	7,000.00	------------	69
1,598.32	426.50	551.55	2,576.37	----------	238.42	5,000.00	1,750.00	70
2,931.36	3,200.00	743.50	6,874.86	97.42	----------	6,000.00	------------	71
6,919.92	775.00	875.25	8,570.17	225.26	----------	4,000.00	------------	72
3,851.05	2,381.00	1,382.50	7,614.55	288.25	----------	25,000.00	5,016.00	73
1,668.46	3,545.00	692.75	5,906.21	2,375.90	----------	10,000.00	------------	74
1,756.77	1,212.75	934.57	3,904.09	----------	496.93	7,000.00	3,000.00	75
1,111.89	1,190.00	542.75	2,844.64	22.85	----------	6,500.00	200.00	76
1,935.18	1,260.00	759.60	3,954.78	200.80	----------	10,000.00	4,950.00	77
343.38	------------	724.00	1,067.38	----------	526.38	700.00	------------	78
4,268.32	2,025.00	684.50	6,977.82	202.50	----------	20,000.00	------------	79
2,412.29	1,835.59	930.85	5,178.73	1,235.91	----------	12,000.00	------------	80
1,158.22	615.70	454.75	2,228.67	87.56	----------	------------	600.00	81
682.90	------------	682.50	1,365.40	232.99	----------	------------	------------	82
2,000.93	552.50	844.85	3,398.28	20.30	----------	15,000.00	8,900.00	83
1,440.00	1,075.00	510.75	3,025.75	137.07	----------	5,000.00	2,200.00	84
*2,229.80	1,368.50	580.25	4,178.55	----------	10.17	6,000.00	3,200.00	85
3,350.49	225.00	860.00	4,435.49	----------	----------	†	------------	86
382.90	400.00	91.25	874.15	92.11	----------	†	------------	87
1,914.23	822.25	397.25	3,133.73	221.22	----------	17,500.00	------------	88
*4,681.45	945.00	580.90	6,207.35	----------	44.34	10,000.00	3,000.00	89
1,592.00	75.00	536.00	2,203.00	----------	90.74	5,000.00	700.00	90
2,771.63	------------	614.50	3,386.13	139.44	----------	1,000.00	------------	91
65,243.19	9,077.50	8,353.85	82,674.54	----------	53.41	150,000.00	11,800.00	92
1,487.24	95.00	447.64	2,029.88	622.66	----------	5,000.00	------------	93
1,223.59	800.00	561.80	2,585.39	939.49	----------	6,000.00	2,000.00	94
$ 302,753.87	$ 108,188.56	$86,697.06	$ 497,639.49	$24,777.33	$10,531.57	$ 950,115.88	$ 174,609.74	
$ 245,815.12	$ 99,363.80	$87,331.17	$ 432,510.09	$33,681.97	$16,460.48	$ 882,988.54	$ 143,591.67	

TOTAL ATTENDANCE AND ADMISSION FEES CHARGED AT COUNTY AND DISTRICT FAIRS IN IOWA FOR 1912.

COUNTY	Total Attendance	Outside Gate Admissions			Grand Stand	Quarter Stretch	
		Adults	Children	Vehicles		Vehicles	Persons
Adair	4,000	$ .25	$ .15	$ .25	$ .15	-------	$ .15
Adams	10,000	.25	.15	.25	.15	.15	.15
Allamakee	8,500	.35	.25	.25	.25	-------	-------
Audubon	8,000	.35	.25	.35	.25	-------	-------
Benton	10,000	.35	-------	.25	.15	-------	-------
Boone (Ogden)	4,000	.35	.25	-------	.10	-------	.10
Boone (Boone)	6,103	.35	.10	.25	.25	-------	.15
Bremer	25,165	.35	.25	.25	.15	-------	.15
Buchanan	13,700	.35	.15	.25	.15	-------	.15
Buena Vista	10,000	.35	.25	.25	.25	-------	-------
Butler	10,000	.35	-------	.25	.15	-------	-----
Calhoun (Manson)	7,000	.35	.15	.25	.25	-------	.25
Calhoun (Rockwell City)	7,500	.35	-------	.35	.25	.25	.25
Carroll	8,000	.35	-------	-------	.15	.25	-------
Cass (Atlantic)	10,000	.35	.15	.35	.25	.25	.25
Cass (Massena)	4,000	.25	.10	.25	.15	-------	.15
Cedar	10,000	.35	.15	.35	.15	-------	.15
Cerro Gordo	32,000	.35	-------	.25	.25	-------	.25
Chickasaw (New Hampton)	9,000	.50	-------	.25	.10	-------	-------
Chickasaw (Nashua)	13,000	.35	.25	.25	.15	-------	-------
Clayton (National)	6,000	.35	.25	.25	.15	-------	-------
Clayton (Strawberry Point)	10,000	.35	.20	.35	.15	-------	-------
Clayton (Elkader)	6,130	.35	.25	.25	.15	-------	-------
Clinton (De Witt)	18,000	.35	.15	.35	.25	-------	.25
Crawford	5,000	.35	.15	.25	.25	.25	-------
Davis	22,000	.25	.15	.10	.10	.10	.10
Delaware	2,500	.35	.15	.25	.15	-------	-------
Dickinson (Spirit Lake)	5,000	.35	.25	.25	.25	-------	-------
Dickinson (Milford)	1,200	.35	.25	.25	.25	-------	-------
Fayette (West Union)	20,000	.35	.35	.50	.25	-------	-------
Fayette (Oelwein)	5,180	.35	.15	.25	.25	-------	-------
Franklin	8,000	.35	.25	.25	.25	-------	-------
Greene	12,885	.35	-------	.35	.25	-------	.25
Grundy	7,187	.35	.15	.25	.15	-------	-------
Guthrie	3,000	.35	.25	.35	.25	-------	-------
Hancock	8,000	.35	-------	.15	.15	.15	.15
Hardin	19,000	.35	.15	.35	.15	-------	-------
Harrison	1,500	.35	-------	.35	.15	.25	.25
Henry (Mt. Pleasant)	22,000	.35	-------	.35	.15	.25	.10
Henry (Winfield)	7,012	.35	.15	.25	.15	.25	.15
Humboldt	7,035	.35	-------	.25	.15	-------	-------
Iowa (Marengo)	2,521	.35	.15	.25	.15	.25	.25
Iowa (Victor)	3,300	.35	.15	.35	.25	-------	.25
Iowa (Williamsburg)	5,000	.25	.15	.25	.25	-------	.25
Jackson	15,000	.35	.15	.25	.15	.25	.25
Jasper	7,559	.35	-------	.35	.25	.25	.25
Jefferson	11,000	.35	-------	.35	.15	-------	-------
Johnson	8,000	.35	.25	.35	.25	.15	.15
Jones	25,000	.35	.15	.25	.15	.15	.15
Keokuk	9,500	.25	-------	.25	.25	.25	.25
Kossuth	18,540	.35	-------	.25	.25	-------	.15
Lee (Donnellson)	5,000	.35	.15	.10	-------	-------	-------
Lee (West Point)	4,500	.35	-------	.25	-------	-------	.10
Linn (Marion)	4,357	.35	.15	.25	.15	-------	-------
Linn (Central City)	6,880	.35	.15	.25	.15	-------	-------
Louisa	19,500	.35	-------	.15	.15	.15	.15
Lyon	13,731	.35	.25	.25	.25	-------	.15
Madison	4,500	.35	-------	.25	.25	.25	.25
Mahaska	6,000	.25	.15	.25	.25	.25	.25
Marion	5,800	.25	.15	.25	.15	.15	.15
Marshall (Rhodes)	4,000	.25	.15	.25	-------	-------	-------
Marshall (Marshalltown)	33,500	.35	.15	.25	.25	.25	.25
Mills	10,000	.25	-------	.25	.25	.25	.25
Mitchell	5,000	.35	.15	.25	.15	-------	-------

TOTAL ATTENDANCE AND ADMISSION FEES CHARGED AT CO. AND DISTRICT FAIRS IN IOWA FOR 1912—CONTINUED

COUNTY	Total Attendance	Outside Gate Admissions			Grand Stand	Quarter Stretch	
		Adults	Children	Vehicles		Vehicles	Persons
Monona	2,288	.35	.25	--------	.25	.25	--------
Monroe	15,000	.25	--------	.15	.15	.15	.15
Montgomery	5,829	.25	--------	.15	--------	.25	.25
Muscatine (West Liberty)	12,500	.35	--------	.25	.20	.20	.20
Muscatine (Wilton Junction)	8,500	.35	.20	.35	.15	--------	.15
O'Brien (Sutherland)	4,000	.50	.25	.35	.15	--------	--------
O'Brien (Sheldon)	5,930	.50	.25	.25	.25	--------	--------
Page (Clarinda)	18,000	.35	.25	.25	.10	.25	.25
Page (Shenandoah)	18,000	.25	.15	.25	.25	.25	.25
Pocahontas	9,200	.35	.25	.25	--------	.25	.25
Pottawattamie	3,975	.35	.15	.35	.15	--------	.15
Poweshiek (Malcom)	5,120	.35	--------	.25	.25	--------	.25
Poweshiek (Grinnell)	5,182	.35	--------	.25	.25	.25	.25
Ringgold	1,700	.25	--------	.15	.15	--------	--------
Sac	10,500	.35	.25	.25	.25	.25	.25
Shelby	10,000	.35	.20	--------	.25	--------	.25
Sioux	7,000	.35	.20	.35	.25	--------	--------
Story	3,244	.25	.15	--------	--------	--------	--------
Tama	6,000	.35	.15	.25	.15	.25	.25
Van Buren	6,000	.25	--------	.25	.10	.10	.10
Wapello	7,056	.35	.15	.25	.15	--------	.25
Warren	8,000	.25	.15	.25	.25	--------	.25
Wayne	1,500	.25	.15	.25	--------	--------	--------
Webster	4,082	.35	.15	.25	.15	--------	--------
Winnebago	3,366	.35	.25	.25	.25	--------	--------
Winneshiek	4,548	.35	.15	.15	.15	--------	--------
Woodbury (Moville)	3,500	.50	.25	--------	.10	--------	--------
Woodbury (Sioux City)	57,094	.50	.25	.25	.50	--------	.25
Worth	3,500	.25	--------	.25	.15	--------	--------
Wright	6,900	.50	.25	.25	.25	--------	--------
Total attendance	892,299						

The following is a summary of the above table:

	50c	35c	25c	20c	15c	10c	No charge
General admission (outside gates)—							
Adults	6	69	19	------	------	------	--------
Children	------	1	24	4	36	2	27
Vehicles	1	19	60	------	6	2	6
Grand stand admissions	1	------	39	1	40	6	7
Quarter stretch admissions—							
Persons	------	------	29	1	18	5	41
Vehicles	------	------	23	1	7	2	61

THE DEPARTMENT OF AGRICULTURE.

From year to year recommendations have been made with a view of making the Department of Agriculture more efficient and of more value to the general public.

At present the publications of the Department are limited to the Iowa Year Book of Agriculture, and the meager sum of $2,400.00 per year is appropriated for the salary of the Secretary and clerical hire. With these limitations placed upon the Department it is impossible to accomplish as much as we should like.

Should the legislature see fit to make a more generous appropriation for carrying on the work of the Department, and authorize the printing of such bulletins and pamphlets by the State Printer as the Board might recommend, much good might be accomplished and a great deal of information given to the public that would be of value, but which is now dead material before it reaches them through the annual Year Book.

The Crop and Farm Statistics collected by the township assessors and tabulated by the department are the source of much authentic and valuable data, but for the reason that provision is not made for printing it in pamphlet form immediately after the tabulation, a great deal of value is lost.

The report of the Stallion Registration Division, showing the name of the owner and name of each stallion qualified for public service in the State should be made a separate report and placed in the hands of each owner and veterinarian directly after the first of the year, if the law is to be properly enforced. Other bulletins dealing with beef production, the dairy industry, prevention of cholera among swine, poultry raising, care and selection of seed, and numerous other subjects, should be prepared and mailed out at a time when they would be of most benefit to the farmers.

Going a little further, attractive pamphlets might be prepared setting forth the state's natural advantages, resources, and agricultural production and distributed at various land expositions with a view of encouraging immigration to Iowa.

In other words, provide the means for making the Department of Agricultural a bureau of information on all subjects pertaining to agriculture and live stock production, and a department to furnish reliable data relative to the agricultural advantages and resources of our State.

IOWA STATE FAIR AND EXPOSITION.

It gives me pleasure to report that the fifty-eighth annual exhibition of the Iowa State Fair and Exposition was a success from the standpoint of exhibits, attendance and receipts. As to the educational features and value of the fair it seems to be the universal opinion that it out-ranked any of the preceding fairs in this respect. This was very concisely stated in the following editorial write-up in the Iowa Homestead immediately after the close of the fair:

> "The Iowa State Fair is not an event; it is an institution. It is a university, broader in its scope and more wide spread in its appeal than the state institutions of higher learning at Ames, Iowa City and Cedar Falls, excellent as these are. It is a clearing house of agricultural and industrial ideas. It is an exposition of the many and divers things which have united to make Iowa one of the really rich and great states of the nation. For fifty-eight years the Iowa State Fair has been growing in popularity and usefulness until it stands, in 1912, at the very pinnacle of its educational appeal and all around value. * * *"

The attendance for 1912 as shown by the ticket auditing department was 272,023, an increase of 1,341 over last year. While this is an attendance that any state fair might be proud of, it did not come up to the expectations of the management. Considering the added features and a more diversified amusement program than was ever put on at our fair, and knowing that our farmers were in a most prosperous condition and amply able to attend the fair this year, the management had reason to expect the usual increase in attendance, which would have brought it up to about 300,000. This lack of increase was not chargeable to the weather for practically every day was fair; not enough rain fell to in any way interfere with the program and only one or two days were at all threatening.

We believe there were two reasons for this lack of increase. The principal reason was the lack of co-operation on the part of the railroads by failing to grant reduced rates the same as they had in the past. The mere fact that a fair can advertise excursion rates attracts a great number of people and is the source of a large amount of advertising that the fair would not otherwise receive. We believe the two weeks of rainy weather just preceding the fair delayed threshing to such an extent that practically every machine in the state was in operation during fair week, which, no doubt, kept away quite a number who would otherwise have attended.

The following is the attendance by days compared with 1911:

	1912	1911
Thursday	3,090	4,074
Friday	7,503	6,063
Saturday	27,957	27,514
Sunday	18,902	17,612
Monday	40,602	37,309
Tuesday	60,379	64,699
Wednesday	58,643	60,580
Thursday	38,831	34,117
Friday	16,116	18,173
Total	272,023	270,682

The exhibit at the 1912 fair was made by 1,662 exhibitors, making a total of 16,315 entries in the fourteen departments. This was an increase of 72 exhibitors over last year and they made a slight increase in the number of entries. It was the general opinion of the management and the agricultural press that it was the best balanced show ever staged on the Iowa State Fair grounds. That all departments were well filled is indicated by the following table giving the number of exhibitors and number of entries in each department compared with 1911:

	No. of Exhibitors 1912	No. of Entries 1912	No. of Exhibitors 1911	No. of Entries 1911
Horses	143	2,002	140	2,114
Cattle	84	1,345	92	1,441
Swine	173	2,384	206	2,886
Sheep	27	646	32	691
Poultry	97	1,508	116	1,361
Agriculture	144	1,624	112	1,033
Pantry	149	2,122	116	1,577
Dairy	101	102	66	69
Horticulture	36	628	48	639
Floriculture	18	271	16	245
Fine arts	216	2,805	223	3,355
School exhibits	84	650	115	613
Dog show	71	228		
Farm implements	309		318	
Total	1,662	16,315	1,590	16,024

The horse show was made by 143 individual exhibitors, who showed 972 head of draft and light harness horses, ponies and mules. The number exhibited was slightly less than last year, owing to the fact that the importations of some of the prominent exhibitors were delayed in Europe on account of the strike among dock hands and therefore could not be fitted for exhibition in time for our fair. This loss was noticed more particularly in the aged stallion classes, the other classes being practically as large as usual and the quality up to standard. Home bred animals were more comspicuous than usual, and especially those shown by Iowa exhibitors. The remark was often heard that "This is a breeders' show and a good one."

The National Draft Horse Breeders' Futurity established by the Chicago Daily Live Stock World for yearling stallions and fillies created much interest and was pronounced a success in every respect. These futurities have been secured for the Iowa State Fair for the coming two years and should result in much good by encouraging breeders to develop their colts in hope of winning these special prizes.

There was an excellent showing of saddle and light harness horses and the management regrets that they found it necessary to show a number of excellent classes, which any horse show might have been proud of, in the open ring where comparatively few people could witness them to advantage.

There were the usual number of Shetland ponies and, located as they were in the center of the new cross section of the horse barn, they showed to advantage and proved a great attraction for young Americans.

The following tabulation gives the number of exhibitors and number of horses entered by breeds as compared with 1911:

Breed	1912 Fair		1911 Fair	
	No. of Exhibitors	No. of Horses Entered	No. of Exhibitors	No. of Horses Entered
Percheron	35	179	30	243
Clydesdale	15	90	15	71
Shire	15	100	14	90
Belgian	21	148	21	100
Draft geldings and mares	17	39	15	42
Standard bred, etc.	31	120	28	106
Saddle horses	16	60	12	44
Morgan	8	36	6	38
Hackney	4	10	5	28
Shetland ponies	12	127	18	186
Welsh ponies	2	14	2	18
Ponies other than Shetland	7	16	9	21
Mules	8	33	7	29
Total	143	972	140	1,016

In the cattle division 84 exhibitors showed 960 head of cattle; 638 head of beef cattle and 322 head of the dairy type. The show was well balanced, every breed being represented by from three to twenty-six herds, except the Ayrshires of which there was one representative herd of twenty head shown by Adam Seitz of Waukesha, Wisconsin. The showing of dairy cattle was stronger by 50 head than last year, while the beef breeds fell off about 140 head. The quality was up to the usual high standard and Iowa exhibitors were well represented in all classes.

The following tabulation gives the number of exhibitors and the number of cattle exhibited by breeds compared with 1911:

Breed	1912 Fair		1911 Fair	
	No. of Exhibitors	No. Cattle Entered	No. of Exhibitors	No. cattle Entered
Short-horns	26	185	27	204
Herefords	13	157	16	237
Aberdeen-Angus	7	70	8	108
Galloway	4	49	4	63
Polled Durham	5	44	8	82
Red Polled	9	133	7	89
Holstein-Friesian	4	91	5	34
Jersey	9	117	7	96
Guernsey	3	50	5	61
Ayrshire	1	20	2	36
Brown Swiss	3	44	3	44
Total	84	960	92	1,055

The conditions incident to swine raising this year were unusually discouraging and were the result of a decreased number being shown at this year's show. Hog cholera was common in many portions of the state and a number of herds were not shown after the entries had been made. One hundred and seventy-three exhibitors showed 2,384 swine, a decrease of 33 exhibitors and 403 head of swine from last year. Considering the conditions this is a showing to be proud of and no doubt was unequaled by that of any other state. A feature of the show which attracted considerable attention was the awarding of the Live Stock World's Poland China Futurity prizes, amounting to $420.00 for boar and sow pigs.

The following tabulation gives the number of exhibitors and the number of swine shown in each class compared with 1911:

Breed	1912		1911	
	No. of Exhibitors	No. of Swine	No, of Exhibitors	No. of Swine
Duroc Jersey	60	759	81	986
Poland China	62	725	62	702
Chester White	26	401	36	586
Hampshire	15	297	14	303
Berkshire	7	118	9	120
Yorkshire	2	63	2	68
Tamworth	1	21	2	22
Total	173	2,384	206	2,787

The sheep show was somewhat different from that of former years, being made up principally of American bred sheep. The foot and mouth disease prevented importations from arriving in time for our show. Twenty-seven exhibitors showed about 700 head of sheep, a decrease of 75 or 100 from last year. The few vacant pens in the east section of the swine barn were used to house a part of the sheep exhibit and this partially relieved the situation. However, at this the management found it necessary to build temporary pens alongside of the old sheds in order to take care of the exhibit. Before the management can expect to induce exhibitors to bring their sheep to the Iowa State Fair in large numbers, and otherwise enhance the value of the exhibit, more adequate quarters must be provided for housing and showing the sheep.

The poultry department was in many respects better than any of the previous exhibits at the fair. The management incorporated in the premium list a rule limiting a non-resident exhibitor from showing more than fifty birds. This resulted in eliminating the professional exhibitor or huckster who picks up an unworthy lot of birds for classes where competition is not strong and makes a circuit of fairs for the premiums he can win. The exhibit was made by ninety-seven exhibitors, most of whom were from Iowa, and they showed 1,508 birds of practical breeds for Iowa farmers. The egg laying contest and the educational exhibit made by the poultry division of the Iowa State College at Ames proved an attractive feature to all who visited the poultry building.

The exhibit of agricultural products was by far the best in years. The center section of the building was well filled with the products of field and garden, and down each side along the walls were lined the individual farm exhibits, all indicating that Iowa would harvest a bounteous crop this year.

The south end of the building was well filled with horticultural and floricultural exhibits, and with the new tables and the cement floor put in place during the past year, presented an attractive and interesting exhibit.

The exhibit of pantry and kitchen products in the balcony of the agricultural building was much larger than usual and necessitated the addition of several show cases to take care of the increased exhibit.

In the dairy section of the building were exhibited the winning samples of creamery and dairy butter, cheese, and all sorts of dairy utensils. The exhibit of the Beatrice Company consisting of statuary reproduced in butter, and the Food and Dairy Commissioner's booth which dispensed information relative to the adulteration and misbranding of food stuffs, proved to be interesting features.

The machinery exhibit was the largest ever assembled at the Iowa State Fair. It was made by 309 exhibitors who exhibited every conceivable piece of machinery from a monkeywrench to steam threshing outfits. This exhibit is appreciated by our progressive farmers for it brings them in touch with all the latest and most modern farm machinery. Many an order is placed during the show for up-to-date implements that will lighten the labors of the men on the farm. The exhibitors in the machinery hall were greatly pleased with the permanent floor placed over the exhibition spaces during the past season. Exhibitors who were unable to secure floor space in the hall and were obliged to show their implements in tents or in the open field were unanimous in the request for the early erection of the other half of the machinery hall. The congestion of outdoor machinery exhibits was greatly relieved by the addition of ten acres of ground in the southwest corner of the grounds. Streets were laid out through the additional ground, and the ground south and west of machinery hall, so that the visitors were brought in close touch with these important exhibits.

The exposition building was packed with textile and fine art exhibits and the work of our public schools.

The Iowa State College building was filled with many interesting and instructive exhibits. Instructors and students were in charge of various booths and departments to answer questions and give out information relative to the exhibits and the work being done at the college. The college exhibit in brief is a week's short course in agricultural and household economics. The lectures by various members of the faculty in the small auditorium were much appreciated by the visitors.

The boys' judging contest was the largest since this feature has been inaugurated, ninety-nine being entered in competition for the five state college scholarships.

The fish and game exhibit in a tent east of the stock pavilion attracted a great deal of attention. It is to be hoped that in the near future the fish and game department, by authority of the legislature, will be able to erect and maintain a permanent building on the grounds for housing this attractive and educational exhibit.

One of the many new features added this year was the Boys' State Fair Camp, which was made up of eighty-five boys from as many different counties in the state. The boys were selected on the competitive plan. Each was required to write an essay on Iowa, which was passed on by a local committee, usually made up of the county superintendent of schools, acting as chairman, the secretary of the county or district fair, and the secretary of the farmers' institute making the other two members of the committee. The expenses of the boys, including railroad fare, board, and sleeping quarters in the two big tents provided for the camp, were paid by the fair management. The boys were assigned light duties, such as ushering in the grand stand and stock pavilion, messenger service, and leading stock; the balance of their time was spent in viewing the exhibits under the direction of the camp superintendents, who were especially qualified to explain the merits of all exhibits. The boys were also addressed by prominent men of the state at their assembly tent. Judging from the essays on the subject "What I Saw and Learned at the Iowa State Fair" written by the boys after the close of the fair and filed with this department, they spent a most enjoyable week and learned by observation many valuable lessons that will remain with them through life.

Special mention should be made of the Babies' Health Contest held under the auspices of the Iowa Congress of Mothers and under the direction of Mrs. Mary T. Watts of Audubon. Two hundred and thirty babies under the age of three years were examined for physical and mental qualifications by a corps of skilled physicians especially qualified for making such examinations. Prizes amounting to $280.00 offered by the fair management were awarded to the most perfect babies in the various classes.

The bench show, conducted under the auspices of the Des Moines Kennel Club and the fair management, brought out some 225 dogs, representing all breeds from the poodle to the large blood-hounds. It attracted the attention of a large number of visitors, and with a few changes in the classification can be made a much larger show and a permanent feature of the fair.

The amusement features, without which no fair is complete, were more diversified and of better quality than ever before provided for the state fair visitors. Three of the best bands to be secured and two orchestras furnished music in the various buildings and at convenient places about the grounds. The reproduction of Cheyenne Frontier Days by the original aggregation that puts on the annual show at Cheyenne, Wyoming, was a deviation from the usual spectacular production in front of the amphitheater each evening. The events indulged in by the Indians and cowboys from the western plains proved novel and entertaining and was well patronized. The racing each afternoon, the free attractions, and the aeroplane flights all helped to make up a pleasing and well balanced amusement program.

The total receipts of the 1912 fair were $185,701.21, or an increase of $6,151.54 over the 1911 fair. The receipts from sources other than ticket sales were $62,557.46, an increase of $4,513.29, and from ticket sales $123,143.75, or an increase of $1,638.25 over last year's fair.

The total disbursements on account of the 1912 fair were $143,968.89, or an increase of $6,101.38 over last year. Of this amount

$58,139.15 was paid out in cash premiums, an increase of $1,874.80 over last year. The other large items of expense were $26,739.45 for music, night shows and free attractions, and $10,471.05 for advertising.

The net profit of the 1912 fair was $41,732.32, or practically the same as last year. The attached itemized statement sets forth in detail the receipts and disbursements of the department for the fiscal year ending November 30, 1912.

IMPROVEMENTS MADE DURING 1912.

The cost of permanent improvements added to the grounds during the year 1912 amounted to $71,056.56. This includes $9,625.00 of the state appropriation for additional land, and $61,381.56 of this amount was paid from the balance carried over from last year and the receipts of the 1912 fair.

Among the principal improvements made this year was the cross section of the permanent horse barn, built of steel and brick at a cost of $27,625.08. This structure is 156x224 feet and stalls 156 draft horses and 132 ponies. It also made it possible to set aside the center section of that portion of the permanent barn facing Rock Island Avenue for carriages and fancy turn-outs used by the light harness horse exhibitors. It also provides room for the office of the superintendent, waiting room for the exhibitors, an assembly room for meetings of breeders' associations, shower bath rooms, water closets, and many other conveniences much appreciated by the exhibitors.

The additional land, consisting of seventy-seven lots which were either bought at private sale or secured through condemnation proceedings, cost $12,814.05, in addition to the $2,375 expended for this purpose last year. With the streets that were vacated and the removal of the street car tracks and loop about ten acres of ground was added to a much congested portion of the grounds.

About one half of the proposed street car entrance was erected this year at a cost of $5,081.73. When completed this station will make it possible to load or unload six or eight cars at the same time and will greatly facilitate transportation between the grounds and the city.

Two sections of bleachers, each 192 feet long and seating 5,500 people, were built at a cost of $5,710.95 and provided comfortable seats for large crowds that witness the afternoon and evening performance in front of the amphitheater, who heretofore were obliged to stand in the paddock.

Cement floor was laid over the exhibition platforms in machinery hall at a cost of $4,385.55. The agricultural building was floored at a cost of $1,944.30. Additional cement walks cost $1,358.99; combination curb and gutters $494.15; street extensions and grading $1,-609.38, switchboard at distributing station and extensions to light lines $2,510.03; moving and placing in good repair eleven horse barns $2,-277.99; fence enclosing additional ground $618.49; and numerous other needed improvements fully set out in the attached statement, making a total of $71,056.56 for the year.

ITEMIZED STATEMENT.

OF RECEIPTS AND DISBURSEMENTS OF THE IOWA DEPARTMENT OF AGRICULTURE FOR THE FISCAL YEAR ENDING NOVEMBER 30, 1912.

RECEIPTS.

Cash balance Dec. 1, 1911		$ 18,036.99
Receipts from sources other than fair:		
Fees, division of horse breeding	$ 8,953.50	
Collections use of grounds, etc	1,530.78	
State appropriation for land	7,000.00	
State appropriation for insurance	1,000.00	
Light plant salvage	1,300.00	
Sale of houses on added ground	1,861.16	
Receipts on account of 1911 fair	469.56	
Insurance for damages to Exposition bldg.	106.00	
Interest on account	243.32	
Miscellaneous receipts	115.50	
Total receipts from sources other than fair		$ 22,579.82

RECEIPTS OF FAIR.

Stall rent, horse department	1,745.00	
Stall rent, cattle department	988.00	
Pen rent, swine department	1,076.00	
Pen rent, sheep department	138.00	
Coop rent, poultry department	345.25	
Space rental poultry department	386.20	
Space rental machinery department	6,191.37	
Space rental and concessions, agr'l. dept.	1,695.00	
Space rental and concessions, dairy dept.	1,731.85	
Space rental and concessions exposition bldg	2,890.00	
Concessions and privileges	23,632.85	
Entry fees, speed department	6,166.00	
Sale of exhibitors tickets	2,612.00	
Sale of forage	5,595.10	
Breeding association special premiums	4,894.46	
Bench show	1,601.18	
Advertising in premium list	695.50	
Collections public safety dept.	69.90	
Miscellaneous receipts	103.80	
Total receipts of fair other than ticket sales	$ 62,557.46	
Ticket sales by treasurer	123,143.75	
Total receipts of fair		$185,701.21
Grand total receipts		$226,318.02

DISBURSEMENTS.

Disbursements other than fair or improvements:

Salaries and expense stallion registration department	$ 1,884.82	
Expense on account of 1911 fair	294.40	
Annual meeting and state agr'l. convention	540.02	
Office furniture and supplies	117.38	
Insurance premiums	550.63	
Expense selling light plant salvage	100.26	
Planting rented ground	156.98	
Repairing exposition building (from insurance)	106.00	
Expense and cleaning grounds when rented for aviation meet, etc	177.54	
Miscellaneous expense	173.40	
Total disbursements other than fair or improvement		$ 4,101.43

EXPENSE OF FAIR.

Executive committee meetings	938.00
Special committee meetings	1,211.54
Express, telegraph and telephone	479.28
Postage	1,032.16
Printing	3,013.17
Advertising	10,741.05
Music and attractions	26,739.45
Light and power	1,052.64
Water during August	294.97
Supplies stationery, etc	356.08
Forage	4,983.00
Salaries and clerical hire	2,290.25
Board meetings	280.00
Assistants and foremen (grounds dept)	740.20
Scavenger work, care of closets, etc	679.25
Track work	320.75
Cleaning streets, oiling, etc	743.18
Miscellaneous labor during fair	625.16
Cleaning buildings before and after fair	592.04
Cleaning grounds before and after fair	777.53
Payroll and expense president's dept	512.50
Payroll and expense secretary dept	659.25
Payroll and expense treasurer dept	1,629.10
Payroll and expense concession dept	1,635.45
Payroll and expense speed dept	1,144.32
Payroll and expense horse dept	1,458.10
Payroll and expense cattle dept	930.05
Payroll and expense swine dept	575.47
Payroll and expense sheep dept	418.00
Payroll and expense poultry dept	394.10
Payroll and expense machinery dept	620.55

Payroll and expense agricultural dept....	583.05	
Payroll and expense dairy dept..........	793.97	
Payroll and expense horticultural dept....	304.14	
Payroll and expense floricultural dept......	69.00	
Payroll and expense fine arts dept.......	581.15	
Payroll and expense school exhibits dept.....	219.40	
Payroll and expense admissions dept.........	2,613.45	
Payroll and expense police dept..........	3,964.30	
Payroll and expense ticket auditing dept..	483.25	
One half expense Iowa State College exhibit	702.73	
Expense of boys' judging contest..........	47.00	
Payroll and expense womans' rest cottage..	57.75	
Payroll and expense dog show...........	1,196.25	
Expense boys' camp.....................	1,237.83	
Expense babies' health contest...........	45.33	
Plants and flowers	535.84	
Freight and drayage....................	70.85	
Premium ribbons and badges...........	834.68	
Hauling manure........................	233.00	
Miscellaneous ground supplies...........	296.65	
Tan bark and saw dust..................	149.50	
Refund on admissions..................	9.50	
Expense Iowa pioneer day...............	131.75	
Dues American trotting association......	100.00	
Ground rental for aviation field and plowing demonstrations	175.50	
Building decorations....................	800.00	
Placing and removing chairs in amphitheater.	120.00	
Rental for tents, chairs, cots, etc..........	569.76	
Refund of special premiums not awarded..	265.00	
Care of water system during fair.........	170.00	
State day banquet......................	126.25	
Coal and firemen administration bldg. dining halls.........................	109.07	
Miscellaneous signs.....................	55.75	
Miscellaneous expense of fair.............	311.45	
Total expense of fair other than premiums		$ 85,829.74

PREMIUMS PAID.

Horses	$ 14,940.00
Cattle	11,738.00
Swine	4,042.00
Sheep	2,306.00
Poultry	1,112.50
Agricultural products....................	4,059.00
Pantry and kitchen products..............	797.50
Honey and bees........................	295.00
Fruit	1,139.25
Dairy products.........................	627.00
Plants and flowers......................	1,382.40

Fine arts	1,662.50	
School exhibits	430.00	
Iowa State College scholarships	650.00	
Speed premiums	12,360.00	
Dog show	318.00	
Babies' health contest	280.00	
Total premiums paid		$ 58,139.15
Total expense of fair		$143,968.89

PERMANENT IMPROVEMENTS.

New horse barn	$ 25,325.08
Additional land	12,814.05
Street car entrance	5,081.73
Bleachers	5,710.95
Cement floor machinery hall	4,385.55
Balance on 1911 contract and steel work on machinery hall	1,348.10
Cement floor agricultural bldg	1,944.30
Street extensions and grading	1,609.38
Walks and curbing	1,358.99
Tools and implements	327.94
Administration building improvements	379.05
Administration building furnishings	231.59
Cattle barns	102.15
Sanitatry closets (balance on 1911 contract)	100.75
Sheep barns	129.32
Speed barns	791.12
Swine pavilion	40.23
Womans' rest cottage	11.37
Miscellaneous grading	331.10
Water distribution system (extensions)	186.31
Drainage	400.21
Switchboard and extensions to light system	2,510.03
Combination curb and gutter	494.15
Culvert north of agricultural bldg	86.80
Fence enclosing additional land	618.49
Agricultural building, booths, tables, etc.	382.32
Moving and repairing horse barns	2,277.99
Platting camp grounds	420.52
Shower baths	227.58
Ticket booths	95.75
Fly traps	56.25
Lawn seats and camp chairs	222.50
Turnstiles	110.00
Permanent ground plans	61.74
Speed department uniforms	76.70
Horse show ring	49.45
Cash register (forage dept.)	25.00
Ticket punches	29.25

Hose and hose carts	23.60	
Ticket boxes	54.00	
Sanitary drinking fountains	48.00	
Chairs for amphitheater	60.75	
Garbage cans	150.00	
Miscellaneous improvements	366.42	
Total improvements		$ 71,056.56

MAINTENANCE OF GROUNDS AND BUILDINGS

Superintendent of grounds and assistants	$ 1,138.05	
Track work	360.43	
Water distribution system	64.99	
Water Dec. 1st to Aug. 1st	194.96	
Hauling manure from speed barns	164.30	
Dragging streets	66.82	
Painting	2,316.51	
Mowing grass and weeds	595.57	
Keep of mule team (feed and shoeing)	184.85	
Implement and harness repairs	130.87	
Miscellaneous hardware for repair work	90.38	
Miscellaneous metal repair work (eaves troughs, etc.)	163.26	
Shoveling snow from roofs	223.60	
Cleaning out ditches and tile drains	83.80	
Grass seed	26.25	
Repairs to boilers (dining hall)	69.05	
Miscellaneous labor on repair work	701.82	
Total maintenance of grounds and bldgs.		$ 6,575.51
Grand total disbursements		$225,702.39
Cash balance on hand		615.63
To balance		$226,318.02

Summary and reconciliation of account with treasurer:

Cash balance, Dec. 1, 1911	$ 18,036.99	
Receipts other than fair	22,579.82	
Receipts of fair	185,701.21	
Grand total receipts		$226,318.02
Disbursements other than fair or improvements	$ 4,101.43	
Expense of fair	143,968.89	
Permanent improvements	71,056.56	
Maintenance of buildings and grounds	6,575.51	
Total disbursements		$225,702.59
Balance on hand		615.63
Warrants outstanding		563.84
Cash balance in treasury Dec. 1, 1912		$ 1,179.47

REPORT OF TREASURER.

Mr. G. S. Gilbertson, treasurer of the State Department of Agriculture, made the following reports:

To The Directors Of The Iowa State Board Of Agriculture.

Gentlemen: I present herewith report of receipts and disbursements for year ending November 30, 1912, as follows:

RECEIPTS.

Balance on hand November 30, 1911		$ 18,246.84
Received from sale of tickets as follows:		
General admissions (day)	$ 75,117.25	
General admissions (evening after 5 p. m.)	3,016.50	
Campers tickets	3,138.00	
Day paddock and bleachers	4,977.00	
Day amphitheater, (reserved at 50 cents)	8,550.50	
Day amphitheater, (reserved at 75 cents)	4,432.00	
Day amphitheater, (reserved at $1.00)	1,280.00	
Evening paddock and bleachers	7,484.75	
Evening amphitheater, (reserved at 50 cents)	6,892.50	
Evening amphitheater, (reserved at 75 cents)	3,848.75	
Evening amphitheater, (reserved at $1.00)	833.00	
Quarter stretch tickets	419.75	
Live stock pavilion (reserved)	3,010.00	
Live stock pavilion (standing)	143.75	
Total ticket sales		$123,143.75
Received from superintendents of departments as follows:		
Fair grounds	$ 2,780.78	
Fine arts	2,890.00	
Machinery	6,191.37	
Dairy	1,731.85	
Agriculture and horticulture	1,695.00	
Horses	1,745.00	
Cattle	988.00	
Swine	1,076.00	
Sheep and poultry	869.45	
Concessions and privileges	23,632.85	
Exhibitor's tickets	2,612.00	
Appropriations	8,000.00	
Police	69.90	
Forage	5,595.10	
Speed	6,166.00	
Special association premiums	4,894.46	
Horse breeding	8,953.50	
Secretary miscellaneous	5,002.70	
Interest	243.32	
Total receipts other than ticket sales		$ 85,137.28
Grand total receipts		$226,527.87

DISBURSEMENTS.

Paid expense warrants	$167,304.35	
Paid premium warrants	58,044.05	
Balance on hand, November 30, 1912	1,179.47	
Total		$226,527.87

Respectfully submitted this 10th day of December, 1912.

G. S. GILBERTSON,
Treasurer.

Des Moines, Iowa, December 10, 1912.

To The Directors Of Iowa State Board of Agriculture:

Gentlemen: This is to certify that there was on deposit in the Iowa Trust & Savings Bank on November 30, 1912, to the credit of G. S. Gilbertson, Treasurer of the Iowa Department of Agriculture, the sum of Eleven Hundred Seventy-nine Dollars and Forty-seven Cents ($1,179.47).

Yours very truly,
A. O. HAUGE,
Cashier.

ITEMIZED STATEMENT

SHOWING COST OF CROSS SECTION OF HORSE BARN.

J. E. Lovejoy on contract	$ 21,600.00	
Automatic feed racks	890.91	
Filling as per contract	875.00	
Two metal doors	220.00	
Six ventilators and ornament for front	265.00	
Architect fees	701.97	
Engineer's fees, measuring fill	18.00	
Advertising for bids	30.00	
Labor laying drains	105.63	
Retaining wall between horse and pony stalls	38.66	
Labor placing temporary stalls along west wall	101.85	
Cement washstands, buggy section	55.08	
Pipe and fittings for water connections	49.15	
Drain pipe and tile	84.06	
Steel lintels over doorways, old section	14.75	
Miscellaneous labor, grounds pay roll	275.02	
Paid to date		$ 25,325.08
Due J. E. Lovejoy on contract		2,300.00
Total cost		$ 27,625.08

ITEMIZED STATEMENT

SHOWING COST OF STREET CAR ENTRANCE.

Contract, Des Moines Bridge and Iron Works	$ 3,539.00	
Cement floor	778.92	
Making fill and grading around entrance	560.00	
Labor, etc., setting division fence	81.41	
Miscellaneous labor, grounds pay roll	97.15	
Lumber for housing turnstiles	25.25	
Total cost		$ 5,081.73

ITEMIZED STATEMENT

SHOWING COST OF BLEACHERS.

Lumber bill	$ 4,176.11	
Nails and hardware	90.75	
Foundation, cement and labor	251.75	
Engineer's services, laying out and giving levels	52.50	
Carpenter work, etc.	1,139.84	
Total cost		$ 5,710.95

ITEMIZED STATEMENT

SHOWING COST OF MACHINERY HALL FOR WHICH THE THIRTY-FOURTH GENERAL ASSEMBLY APPROPRIATED $65,000.00.

James Horrabin, Des Moines, for culvert under building	$ 3,293.10	
Massillon Bridge & Structural Co., Massillon, Ohio, on contract for steel work	30,789.88	
J. E. Lovejoy, Des Moines, on general contract	31,456.80	
James Horrabin, Des Moines, contract for making fill and grading around building	5,401.11	
O. O. Smith, architect fees	2,000.00	
A. E. Holmes, engineering work, laying out building, measuring pits and fill	125.00	
Advertising for bids	77.85	
Extras, metal work, etc.	487.10	
Miscellaneous work by superintendent of grounds	635.25	
Cindering walks and aisles	647.35	
Total expenditure during 1911		$ 74,913.44
Expenditures during 1912—		
Balance on 1911 contracts	$ 487.80	
Additional steel work	686.80	
Change in drains	34.90	
Re-surfacing aisles	88.60	
Steel gates for main entrance	50.00	1,348.10

Cement flooring—		
Potts Bros., as per contract	$ 4,354.75	
Engineer's services, giving levels	11.50	
Advertising for bids	8.50	
Drawing and prints of floor plan	10.80	
Cost of floor		4,385.55
Total cost of Machinery Hall		$ 80,647.09

ITEMIZED STATEMENT

SHOWING COST OF SANITARY CLOSETS FOR WHICH THE THIRTY-FOURTH GENERAL ASSEMBLY APPROPRIATED $8,000.00.

Pray & Comerford, Des Moines, Iowa—		
Contract for plumbing		$ 5,833.46
J. E. Lovejoy, contract for alternations to rooms for closets under grandstand		2,500.75
Five cesspools for closets:		
Brick, tile and cement	$ 122.86	
Water pipe and fittings	71.77	
Five sewer rings and covers	24.50	
Labor by superintendent of grounds	212.30	431.43
Metal closet signs		7.50
Architect fees		235.06
Advertising for bids		9.79
Total cost of closets		$ 9,017.99

ITEMIZED STATEMENT

OF LAND PURCHASED FOR ADDITION TO STATE FAIR GROUNDS FOR WHICH THE THIRTY-FOURTH GENERAL ASSEMBLY APPROPRIATED $12,000.

The following lots were purchased by the Interstate Realty Company, W. H. Harwood, secretary, held in trust and deeded to the State of Iowa June 6, 1912:

Lots 2, 3, 4, 5, 6, 7, and 8, block A	$ 700.00
Lots 21 and 22, block D	200.00
Lots 9, 10, 11, 12 and 13, block A	500.00
Lots 14 and 15, block A (improved)	450.00
Lots 9, 10, 11 and 12, block D	425.00
Lots 9, 10, 11 and 12, block E	425.00
Lots 3 and 4, block E	200.00
Lot 24, block D	175.00
Lots 1 and 2, block F	160.00
Lots 5 and 6, block F	160.00
Lots 9, 10 and 11, block F	350.00
Lots 12, 13 and 14, block F	315.00
Lot 16, block F	125.00

Lots 17 and 18, block F (improved)	400.00	
North one-half lots 25, 26, 27 and 28 and lot 24, block F (improved)	1,000.00	
Lots 1, 2, 3, 4, 5, 6, 7 and 8, block H	800.00	
Lots 21 and 22, block H (improved)	400.00	
Lots 26, 27 and 28, block H (improved)	1,200.00	
Lots 19, 20 and 21, block F (improved)	900.00	
Lots 22 and 23, block F (improved)	350.00	
Lot 23, block D	91.00	
		$ 9,326.00
Lots condemned May 16, 1912—		
Lots 19, 20, 21, 22, 23, 24, 25, 26, 27 and 28, block A	$ 1,000.00	
Lots 23, 24 and 25, block H (improved)	1,500.00	
Lot 15, block F (improved)	500.00	
Frank Thompson, damages for vacating property at 3307 Logan avenue	10.00	
To expense of sheriff's jury	39.50	
		$ 3,049.50
Lots condemned June 21, 1912:		
Lots 16, 17 and 18, block A	$ 300.00	
To expense sheriff's jury	29.75	
		$ 329.75
To additional deposit with sheriff on account of increase in award to Eva Brown et al. by trial jury in the district court		500.04
Commission to Interstate Realty Company for purchasing lots for state		932.60
Expense of moving and repairing Schmuck house:		
H. M. Kinsell, moving house	$ 125.00	
Jas. Fredregill, digging cellar and building foundation	68.75	
Repair work, grounds pay roll	46.05	
J. R. McHenry, plastering	13.60	
Lime and cement	5.40	
Wall paper replaced	4.11	
Connecting gas	3.60	
		266.51
Expense moving and repairing Cruikshank house:		
C. S. Cooter, lot 1, block E	$ 200.00	
A. Cruikshank, damages for trees, etc.	194.60	
H. M. Kinsell, moving house	75.00	
W. R. Quinnett, building foundation and chimneys	48.00	

Rebuilding out buildings, fences, etc., grounds pay roll	90.32	
Lumber	5.30	
Brick for foundation	15.66	
Lime and cement	6.60	
		635.48
Miscellaneous Expense:		
For abstracting	$ 61.25	
For recording deeds	14.45	
Auctioneer selling houses	20.00	
Refund for barn sold	17.00	
Advertising house sale and condemnation notice	29.72	
Insurance purchased on Engleman house	5.75	
		148.17
Total cost		$ 15,189.05
Receipts for Purchasing Land—		
State appropriation	$ 12,000.00	
From sale of houses	1,506.50	
Insurance on house sold	5.45	
Sale of lots 3 and 4, block E, by Interstate Realty Company	220.00	
Refund from sheriff on account of settlement with Eva Brown et al.	129.21	
Total receipts		$ 13,861.16
Amount in excess of appropriation		$ 1,327.89

The following is a statement showing amount expended for improvements within the past eleven years from receipts of fair and from state appropriations, also amount paid in cash prizes during the same period:

Year	Amount of Improvements from Fair Receipts	Amount of Improvements by Appropriation	Total Amt. Improvements in Eleven Years	Amount Paid out for Cash Prizes
1902	$ 26,457.00	$ 37,000.00 Stock Pavilion	$ 63,457.00	$ 21,736.31
1903	17,855.00		17,855.00	23,813.13
1904	12,640.00	47,000.00 Agr'l Bldg.	59,640.00	24,691.68
1905	11,963.00		11,693.00	28,556.89
1906	30,035.00		30,035.00	31,703.94
1907	41,459.00	75,000.00 Swine Barn	116,459.00	35,504.79
1908	53,663.00		53,663.00	38,744.56
1909	50,208.00	100,000.00 Amphitheater	150,208.00	42,262.76
1910	24,360.00		24,360.00	49,717.50
1911	31,775.00	65,000.00 Machinery Hall		
		8,000.00 Closets		
		5,000.00 Land	109,775.00	56,264.35
1912	64,056.00	7,000.00 Land	71,056.00	58,139.15
	$ 364,471.00	$ 344,000.00	$ 708,471.00	$ 411,135.06

COMPARATIVE STATISTICS OF LEADING STATE FAIRS, 1912.

	Receipts from ticket sales	Total receipts of fair	Premiums other than speed	Total expense of fair	Total state apppopria-tions for improvements	Value of grounds and improvements	Attendance
California	$ 43,873.30	$ 73,002.87	$ 19,108.74	$ 70,135.08	$ 165,000	$ 267,265	93,200
Illinois	85,665.75	148,461.28	46,211.62	148,276.28	548,600	1,174,000	
Indiana					120,000		
Iowa	123,143.75	185,701.21	45,779.15	143,968.89	344,000	925,000	272,023
Kansas (Topeka)	36,188.75	62,481.78	13,618.31	55,234.97		250,000	120,000
Kansas (Hutchison)	28,690.00	58,400.00	14,481.00			165,000	79,000
Kentucky	28,920.80	108,298.02	18,533.25	105,935.59	55,000	300,000	97,687
Louisiana	24,999.90	48,882.13	10,482.85	38,670.64	100,000	300,000	48,085
Michigan (Detroit	73.200.00	214,000.00	26,480.00	192,000.00		650,000	218,000
Minnesota	193,904.05	264,101.62	48,922.37	206,245.78	579,999	1,660,937	344,128
Missouri					605,000		
Montana	14,539.73	95,495.18	12,148.20	42,320.57	35,000	102,929	41,050
Nebraska	72,063.00	104,330.20	19,050.83	120,162.02	157,000	325,000	166,934
New Jersey	67,829.40	99,500.00	10,523.36	67,500.00		250,000	144,100
New York	97,831.00	145,000.00	46,500.00	108,000.00	1,825,000	2,000,000	172,500
North Dakota	18,765.50	43,862.19	9,220.29	42,147.38	45,000	86,947	37,503
Ohio	76,811.50	105,758.10	31,433.09	79,303.20	500,000	1,000,000	141,431
Oklahoma	43,171.10	101,062.18	19,206.22	105,733.10		323,062	100,000
South Dakota	33,864.25	47,058.17	9,903.56	36,124.01	113,873	225,000	75,000
Washington	14,037.60		9,109.75	35,000.00	215,000	180,000	34,000
Wisconsin	40,824.86	122,000.00	30,000.00	119,000.00	304,000	500,000	110,729

CONDENSED FINANCIAL STATEMENT OF THE STATE DEPARTMENT

Showing Receipts and Disbursements of Iowa State Fair and Other Sources
Repairs, etc., and Net Profit of

Year	Receipts							
	Cash balance beginning of year	From state fair	From state appropriation	From other sources	Total receipts for year	Grand total	Premiums paid	Other fair expenses
1896 ----------	$ 116.79	$ 36,622.10	$ 7,000.00	$ 6,710.22	$ 50,332.32	$ 50,449.11	$ 16,404.29	$ 15,351.06
1901 ----------	28,616.55	50,712.91	1,000.00	2,753.82	54,466.73	83,083.28	19,203.83	13,925.87
1902 ----------	34,244.93	63,084.71	38,000.00	3,037.06	104,121.77	138,366.70	21,736.31	20,073.34
1903 ----------	30,372.25	59,838.56	1,000.00	3,140.79	63,979.35	94,351.60	23,813.13	21,989.56
1904 ----------	28,963.11	66,100.36	48,000.00	2,622.03	116,722.39	145,685.50	24,691.68	28,485.42
1905 ----------	29,657.23	84,786.25	1,000.00	2,840.92	88,627.17	118,284.49	28,730.89	34,408.62
1906 ----------	39,976.34	110,929.85	1,000.00	3,717.16	115,647.01	155,623.35	31,703.94	40,315.60
1907 ----------	50,294.87	104,356.75	76,000.00	5,452.34	185,908.09	236,103.96	35,504.79	43,647.20
1908 ----------	35,327.90	138,764.66	1,000.00	3,262.95	143,027.61	178,355.51	38,744.56	55,848.65
1909 ----------	25,328.73	137,307.40	101,000.00	5,257.42	243,564.82	268,893.55	42,262.76	66,963.12
1910 ----------	4,985.25	157,259.77	1,000.00	14,658.30	171,918.07	176,908.32	49,717.50	80,513.68
1911 ----------	7,283.44	179,549.67	78,000.00	5,275.72	262,825.39	270,108.83	56,264.35	81,603.16
1912 ---------	18,036.99	185,701.21	8,000.00	14,579.82	208,281.03	226,318.02	58,139.15	85,829.74

OF AGRICULTURE FOR YEARS OF 1896 AND 1901 TO 1912, INCLUSIVE.

and Expenditures, Together with Amount Expended for Improvements, Fair for Each of the Years Named.

Disbursements							Profits of Fair		
Improvements and repairs	Maintenance of grounds and buildings	Disbursements other than for fair	Total for year	Cash on hand	Previous year's business or outstanding warrants	Grand total	Total receipts of fair	Total expenses of fair	Net profits
$ 7,471.95	-----------	$ 14,019.88	$ 53,247.28	$ 152.84	-----------	$ 53,400.12	$ 36,622.10	$ 31,807.35	$ 4,814.75
13,378.73	-----------	2,313.44	48,821.87	34,244.93	16.48	83,083.28	50,712.91	33,129.70	17,583.21
63,457.12	-----------	2,608.69	107,875.46	30,372.25	118.99	138,366.70	63,084.71	41,809.65	21,275.06
17,855.77	-----------	1,704.83	65,363.29	28,963.11	25.20	94,351.60	59,838.56	45,802.69	14,035.87
59,641.11	-----------	3,195.43	116,013.64	29,657.23	14.63	145,685.50	66,100.36	53,177.10	12,823.26
11,963.09	-----------	3,345.27	78,447.87	39,976.34	139.81	118,284.40	84,786.25	63,139.51	21,646.74
30,035.33	-----------	3,385,87	105,440.74	50,294.87	112.26	155,623.35	110,929.85	72,459.39	38,470.46
16,459.05	-----------	5,043.03	200,654.07	35,327.90	176.19	236,103.96	104,356.75	79,151.99	25,204.76
53,663.69	-----------	4,975.50	153,231.98	25,328.73	381.39	178,355.51	138,764.66	94,593.21	44,171.45
150,208.58	-----------	4,379.91	263,814.37	4,985.25	332.39	268,893.55	137,307.40	109,225.88	28,081.52
24,360.98	-----------	14,740.26	169,332.42	7,283.44	287.46	176,903.32	157,259.77	130,231.18	27,028.59
109,775.04	-----------	4,429.29	252,071.84	18,036.99	209.85	270,108.83	179,549.67	137,867.51	41,682.16
71,056.56	$ 6,575.51	4,101.43	225,702.59	615.63	563.84	226,318.02	185,701.21	143,968.89	41,732.32

PREMIUM WARRANTS.

8-24	9625	D. O. Alleman	$ 270.00
8-24	9626	L. H. Horner	160.00
8-24	9627	O. H. Myers	360.00
8-24	9628	J. S. Ware	20.00
8-24	9629	Sam Hawley	120.00
8-24	9630	C. W. McMillan (for Dan'l Haring)	100.00
8-24	9631	H. W. Buckbee	40.00
8-24	9632	B. Sholes	15.00
8-24	9633	D. Brant	30.00
8-24	9634	W. E. Trapp	72.50
8-24	9635	C. B. Irwin	137.50
8-24	9636	W. M. Scott	75.00
8-26	9637	Geo. C. Anderson (for Matt Kane)	80.00
8-26	9638	King Hill Stock Farm	12.50
8-26	9639	O. H. Myers	270.00
8-26	9640	H. W. Brown	360.00
8-26	9641	Chas. W. Kenyon	160.00
8-26	9642	E. G. Bohanan	80.00
8-26	9643	Chet Kelly	40.00
8-27	9644	Wm. Beecroft	50.00
8-27	9645	Frank E. Strahan	100.00
8-27	9646	W. Trapp	22.50
8-27	9647	Chet Kelly	12.50
8-27	9648	O. H. Myers	225.00
8-27	9649	H. W. Buckbee	100.00
8-27	9650	Ralph O. Childs	225.00
8-27	9651	E. Russell	200.00
8-27	9652	F. C. Caine	50.00
8-28	9653	C. F. Adams	50.00
8-28	9654	Finnicum & James	25.00
8-28	9655	Porter Bros.	50.00
8-28	9656	John D. Sprague	450.00
8-28	9657	Oscar Ames	25.00
8-28	9658	H. H. Smith	225.00
8-28	9659	Geo. C. Anderson	100.00
8-28	9660	L. E. Kasserman	15.00
8-28	9661	Dick McMahon	450.00
8-28	9662	Riever Bros.	100.00
8-28	9663	Ed Farnsworth	150.00
8-28	9664	Joe McLaughlin	450.00
8-28	9665	King Hill Stock Farm	150.00

8-28	9666	Fred S. Clark	37.50
8-28	9667	Chas. R. Allen	495.00
8-28	9668	Chas. Hardie	100.00
8-28	9669	G. Spicer	75.00
8-28	9670	H. J. McKenna	70.00
8-29	9671	W. H. Smollinger	140.00
8-29	9672	W. M. Anderson	75.00
8-29	9673	C. E. Cameron	150.00
8-29	9674	Oakwood Stock Farm	352.50
8-29	9675	H. W. Prentice	7.00
8-29	9676	Fred Kraemer	7.00
8-29	9677	M. J. McAhern	2.00
8-29	9678	Normandy Kennels	14.00
8-29	9679	Henry DeGooyer	10.00
8-29	9680	Laura V. Russell	7.00
8-29	9681	M. B. Brown	2.00
8-29	9682	Fordham Kennels	2.00
8-29	9683	A. Henderson	3.00
8-29	9684	James McDonald	3.00
8-29	9685	Mrs. Thomas F. Duhigg	1.00
8-29	9686	Du Page Kennels	6.00
8-29	9687	Alex Smith	7.00
8-29	9688	E. G. Marquardt	3.00
8-29	9689	J. C. Thompson	4.00
8-29	9690	M. Ten Hogan	9.00
8-29	9691	Margaret Dole	3.00
8-29	9692	Delno Hall	2.00
8-29	9693	Guy F. Hall	2.00
8-29	9694	Cedarcrest Kennels	4.00
8-29	9695	Dr. L. L. Davis	7.00
8-29	9696	Gaston Jules Garey	17.00
8-29	9697	Col. John Duff	10.00
8-29	9698	T. H. Kaldenberg	15.00
8-29	9699	J. W. Curphy	1.00
8-29	9700	Jos. A. Roach	8.00
8-29	9701	John C. Doolittle	7.00
8-29	9702	Vickery Kennels	26.00
8-29	9703	R. A. Norris	7.00
8-29	9704	W. O. Richhart	7.00
8-29	9705	R. C. Strock	3.00
8-29	9706	Geo. Brodie	3.00
8-29	9707	Chas. P. Squires	7.00
8-29	9708	C. R. Allen	35.00
8-29	9709	Roy Smith	360.00
8-29	9710	Schinstock Bros.	160.00
8-29	9711	Schinstock Bros.	315.00
8-30	9712	C. W. Reeder	30.00
8-30	9713	C. E. Cameron	50.00
8-30	9714	K. J. Midbo	100.00

8-30	9715	B. R. Fatta	80.00
8-30	9716	M. D. Shutt	75.00
8-30	9717	Hanson's Poultry Farm	50.00
8-30	9718	Pat Jackman	25.00
8-30	9719	Dick McMahon	80.00
8-30	9720	B. Shively	360.00
8-30	9721	Walter I. Pike	450.00
8-30	9722	Geo. Anderson	225.00
8-30	9723	W. B. Taylor	150.00
8-30	9724	W. B. Taylor	40.00
8-30	9725	W. B. Taylor	160.00
8-30	9726	E. L. Nagle & Son	52.00
8-30	9727	E. L. Bitterman	154.00
8-30	9728	O. H. Peasley & Sons	36.00
8-30	9729	A. G. Forsbeck	19.00
8-30	9730	W. A. Taylor & Sons	61.00
8-30	9731	H. S. Allen	16.00
8-30	9732	F. H. Allen	40.00
8-30	9733	D. H. Lewis	198.00
8-30	9734	Mike Sharp & Son	182.00
8-30	9735	Will Michael	18.00
8-30	9736	S. A. Roberts	50.00
8-30	9737	J. E. Beckendorf	12.00
8-30	9738	R. J. Harding	17.00
8-30	9739	Geo. Gawley	6.00
8-30	9740	O. E. Osborn	2.00
8-30	9741	H. E. Browning	34.00
8-30	9742	L. C. Burford	23.00
8-30	9743	Harris Logan	3.00
8-30	9744	Frank Read & Son	5.00
8-30	9745	Walnut Hall Farm	132.00
8-30	9746	T. D. Postle	56.00
8-30	9747	R. & W. Postle	145.00
8-30	9748	C. C. Croxen	132.00
8-30	9749	Clayton Messenger	93.00
8-30	9750	C. A. Evans	40.00
8-30	9751	Thos. F. Kent	113.00
8-30	9752	P. H. Sheridan	6.00
8-30	9753	J. H. Faris	2.00
8-30	9754	A. P. Alsin	4.00
8-30	9755	Wigstone Bros.	10.00
8-30	9756	C. S. Hechtner	281.00
8-30	9757	B. M. Boyer	35.00
8-30	9758	F. C. Paul	82.00
8-30	9759	J. S. Fawcett & Son	101.00
8-30	9760	Fred Crawford	120.00
8-30	9761	A. E. Noe	140.00
8-30	9762	Belle Stantz	50.00
8-30	9763	J. D. Hannon	15.00

8-30	9764	B. Sholes	75.00
8-30	9765	B. Sholes	37.50
8-30	9766	F. O. Dunkerton	4.00
8-30	9767	A. D. Anderson & Son	14.00
8-30	9768	Willie Essig	181.00
8-30	9769	P. C. James	8.00
8-30	9770	Isom J. Martin	47.00
8-30	9771	Hockett & Ashby	24.00
8-30	9772	C. A. Brook	2.00
8-30	9773	Forest S. McPherson	45.00
8-30	9774	Fred Sievers	8.00
8-30	9775	Barr & Rae	97.00
8-30	9776	J. H. Nissen	28.00
8-30	9777	Fred W. Lahr	24.00
8-30	9778	Geo. W. Lasley	2.00
8-30	9779	Waltemeyer Bros.	255.00
8-30	9780	S. Rail & Son	142.00
8-30	9781	J. E. Meharry	223.00
8-30	9782	O. J. Mooers	22.00
8-30	9783	D. B. Rightmire	28.00
8-30	9784	Farmers Farm	169.00
8-30	9785	E. S. Barker	176.00
8-30	9786	Hanks & Bishop	50.00
8-30	9787	E. W. Davis & Co.	78.00
8-30	9788	Chas. W. Krumm	27.00
8-30	9789	Joe Kramer	20.00
8-30	9790	B. H. Kunkle	222.00
8-30	9791	Arthur Spear	22.00
8-30	9792	Chas. Hardie	70.00
8-30	9793	J. W. Thomas	25.00
8-30	9794	C. Irwin	75.00
8-30	9795	C. Irwin	37.50
8-30	9796	C. B. Irwin	22.50
8-30	9797	C. Irwin	15.00
8-30	9798	Irwin Bros.	37.50
8-30	9799	C. B. Irwin	37.50
8-30	9800	Frank Carter	15.00
8-30	9801	Hugh Clark	22.50
8-30	9802	G. W. Spicer	22.50
8-30	9803	J. K. Scott	26.00
8-30	9804	A. W. Arnold	234.00
8-30	9805	F. W. Cook	168.00
8-30	9806	F. S. King Bros. Co.	108.00
8-30	9807	S. W. Stewart & Son	45.00
8-30	9808	D. H. Paul	45.00
8-30	9809	Harry D. Eddingfield	62.00
8-30	9810	E. M. Metzger	42.00
8-30	9811	F. M. Buck	154.00
8-30	9812	W. Warren Morton	232.00

8-30	9813	A. C. Binnie	338.00
8-30	9814	W. H. Dunbar	38.00
8-30	9815	J. F. Leahy	18.00
8-30	9816	Walker Bros.	166.00
8-30	9817	Martin Nelson	98.00
8-30	9818	Finch Bros.	489.00
8-30	9819	W. V. R. Powis	40.00
8-30	9820	F. M. Meyers	35.00
8-30	9821	Iowana Farm	100.00
8-30	9822	O. J. Mooers	1,113.00
8-30	9823	J. H. Miller	372.00
8-30	9824	Achenbach Bros.	161.00
8-30	9825	S. M. Croft & Son	111.00
8-30	9826	Thos. Bass	395.00
8-30	9827	E. Pancake	113.00
8-30	9828	Hook & Woods	495.00
8-30	9829	J. W. Larrabee	33.00
8-30	9830	Chas. Graff	121.00
8-30	9831	F. Davis & Son	72.00
8-30	9832	J. B. Ashby	21.00
8-30	9833	G. E. Cole	170.00
8-30	9834	Geo. J. Sayer	240.00
8-30	9835	Rapp Bros.	86.00
8-30	9836	W. A. Wickersham	29.00
8-30	9837	New Bloomfield Saddle Horse Co.	55.00
8-30	9838	Houchin & Anderson	250.00
8-30	9839	Wilcox & Stubbs	367.00
8-30	9840	J. P. Cudahy	319.00
8-30	9841	J. H. & J. W. Van Natta	232.00
8-30	9842	L. C. Olaff	43.00
8-30	9843	Phillip Funk	20.00
8-30	9844	Adolph P. Arp	98.00
8-30	9845	Hutson & Son	200.00
8-30	9846	Haussler Bros.	218.00
8-30	9847	R. H. Hazlett	191.00
8-30	9848	W. M. Smith	9.00
8-30	9849	R. E. Watts & Son	43.00
8-30	9850	Chas. Escher & Son	45.00
8-30	9851	Geo. M. Vader	10.00
8-30	9852	Hildebrand Bros.	20.50
8-30	9853	Frank White	252.00
8-30	9854	Frank White	28.00
8-30	9855	C. A. Nelson	191.00
8-30	9856	John Cameron	15.00
8-30	9857	Allynhurst Farm	233.00
8-30	9858	Alex Galbraith & Son	205.00
8-30	9859	John Donhowe	148.00
8-30	9860	C. B. McCanna	62.00
8-30	9861	Ed Kingsley	20.00

8-30	9862	J. B. Baker	40.00
8-30	9863	Morgan Horse Farm	130.00
8-30	9864	W. J. Miller	501.00
8-30	9865	P. F. Smith	86.00
8-30	9866	J. C. Brunk	170.00
8-30	9867	C. A. Saunders	270.00
8-30	9868	Wild Rose Farm	1,200.00
8-30	9869	H. H. Powell & Son	51.00
8-30	9870	H. G. McMillan & Son	690.00
8-30	9871	Garrie Bishop	10.00
8-30	9872	E. M. Hoagland	45.00
8-30	9873	J. A. Loughridge	75.00
8-30	9874	Thos. L. Leonard	151.00
8-30	9875	G. A. McCarty	90.00
8-30	9876	Wm. Crownover	265.00
8-30	9877	Wm. Hopley Est.	85.00
8-30	9878	Dunham's	125.00
8-30	9879	W. J. Brinigar	65.00
8-30	9880	Anoka Farms	389.00
8-30	9881	Anoka Farms	700.00
8-30	9882	Straub Bros.	387.00
8-30	9883	O. S. Gibbons & Son	173.00
8-30	9884	Dr. A. E. Merkle	33.00
8-30	9885	Mrs. E. L. Karr	7.00
8-30	9886	Frank Shekleton	20.00
8-30	9887	Theo. Martin	46.00
8-30	9888	W. W. Vaughn	6.00
8-30	9889	W. & A. Graham	140.00
8-30	9890	Jno. R. Rittenhouse	143.00
8-30	9891	W. C. Estes	20.00
8-30	9892	Bruce Robinson	50.00
8-30	9893	J. H. Williams	232.00
8-30	9894	C. B. Dannen & Son	150.00
8-30	9895	Ed P. Urich	50.00
8-30	9896	Adam Seitz	416.00
8-30	9897	H. C. Young	150.00
8-30	9898	H. W. Ayers	256.00
8-30	9899	J. J. Brennan	10.00
8-30	9900	Carl Rosenfeld	49.00
8-30	9901	J. L. Risley	18.00
8-30	9902	Hamilton Bros.	150.00
8-30	9903	C. W. McDermott	63.00
8-30	9904	H. Lefebure	115.00
8-30	9905	J. E. Bailey	5.00
8-30	9906	J. Leitch & Sons	178.00
8-30	9907	Thurman's Woodbine Place	45.00
8-30	9908	A. L. Russell	30.00
8-30	9909	M. H. Corey	12.00
8-30	9910	Alex W. Arnold	6.00

8-30	9911	A. J. Blakely	88.00
8-30	9912	R. F. French	68.00
8-30	9913	J. R. Peak & Son	820.00
8-30	9914	Frank E. Huston	165.00
8-30	9915	Dierling & Otto	115.00
8-30	9916	Hann & Mayne	46.00
8-30	9917	Crawford & Griffin	115.00
8-30	9918	Hillcrest Farm	5.00
8-30	9919	Cotta & Williams	65.00
8-30	9920	A. L. Champlin	245.00
8-30	9921	E. W. Kreischer	27.00
8-30	9922	Marion T. Anderson	30.00
8-30	9923	F. W. Weinrich	63.00
8-30	9924	A. O. Huff	83.00
8-30	9925	W. B. Rodgers	315.00
8-30	9926	Chas. Hardie	35.00
8-30	9927	H. S. Helphrey	450.00
8-30	9928	Oscar Ames	70.00
8-30	9929	G. A. Ury	15.00
8-30	9930	Walter S. Pike	200.00
8-30	9931	Fred Steiner	140.00
8-30	9932	Geo. Eggert	215.00
8-30	9933	E. Bruins	223.00
8-30	9934	Smith & Roberts	326.00
8-30	9935	Wm. Herkelman	128.00
8-30	9936	Kuper Bros.	8.00
8-30	9937	Brown & Walker	10.00
8-30	9938	Frank Clauss	199.00
8-30	9939	South Bros.	88.00
8-30	9940	R. M. Anderson	232.00
8-30	9941	A. L. Foster	60.00
8-30	9942	J. T. Judge	78.00
8-30	9943	F. H. Ehlers	73.00
8-30	9944	F. W. Akers	6.00
8-30	9945	John McCoy	5.00
8-30	9946	Paul & Wilson	8.00
8-30	9947	G. W. Grigsby	153.00
8-30	9948	J. C. Thompson & Son	26.00
8-30	9949	H. C. Davis	150.00
8-30	9950	Ed Clapper	10.00
8-30	9951	R. W. Crumpacker	20.00
8-30	9952	W. H. S. Barnett	16.00
8-30	9953	W. W. Seeley	45.00
8-30	9954	Sheehan Bros.	40.00
8-30	9955	Geo. A. Heyl	418.00
8-30	9956	Robt. Dyer	30.00
8-30	9957	B. Sholes	15.00
8-30	9958	D. Brant	22.50
8-30	9959	M. M. Anderson	112.50

8-30	9960	Reeves Bros.	100.00
8-30	9961	J. H. Battger	50.00
8-30	9962	Irwin Bros.	97.50
8-31	9963	G. W. Spicer	37.50
8-31	9964	Harry E. Burgess	5.00
8-31	9965	Iowana Farms	50.00
9- 9	9966	Wood Harper (Des Moines Nat'l Bank)	45.00
9-10	9967	Mrs. Ira Hall	10.00
9-10	9968	Stock Yards Harness & Saddlery Co.	100.00
9-11	9969	Thos. F. Stevenson (Valley Nat'l Bank)	50.00
9-13	9970	Thos. F. Stevenson	10.00
9-13	9971	H. H. Polk	15.00
9-17	9972	John S. Albaugh	88.00
9-17	9973	Mrs. N. B. Ashby	12.00
9-17	9974	M. Anderson	13.67
9-17	9975	C. S. Adams	3.00
9-17	9976	Altamont Poultry Farm	2.00
9-17	9977	Mrs. T. N. Adams	2.00
9-17	9978	A. L. Anderson	5.00
9-17	9979	Mrs. Jesse Alexander	19.00
9-17	9980	J. H. Allen	7.00
9-17	9981	Frances C. Adams	50
9-17	9982	L. P. Anderson	10.52
9-17	9983	Mrs. A. C. Atherton	2.00
9-17	9984	Mrs. J. H. Abernathy	17.50
9-17	9985	Naomi Anneberg	4.00
9-17	9986	G. H. Burge	147.00
9-17	9987	Bellows Bros.	55.00
9-17	9988	Geo. E. Brown	63.00
9-17	9989	Joel Bloomster	11.57
9-17	9990	C. F. Bollig	8.42
9-17	9991	Chas. Bachman	25.00
9-17	9992	Lester Barton	2.00
9-17	9993	N. Bartholomew	30.00
9-17	9994	C. B. Bracy	7.37
9-17	9995	Mrs. M. Bredimus	101.50
9-17	9996	Mrs. H. S. Branson	10.00
9-17	9997	J. W. Booth	20.00
9-17	9998	Mrs. Rosella Brewer	1.00
9-17	9999	J. J. Boland	8.42
9-17	10000	J. W. Bittenbender	97.00
9-17	10001	W. Beatty	1.00
9-17	10002	J. J. Brunner	2.10
9-17	10003	W. E. Buren & Son	2.00
9-17	10004	Oscar L. Bock	12.00
9-17	10005	J. Ross Bachman	8.00
9-17	10006	C. A. Barquist	13.00
9-17	10007	F. W. Bremer	7.37
9-17	10008	B. F. Bentley	3.15

9-17	10009	Mrs. Lake Bower	19.00
9-17	10010	Miss Gertrude Brereton	15.00
9-17	10011	Mrs. A. A. Bennett	16.00
9-17	10012	Harry E. Burgess	9.50
9-17	10013	Frances Blanchard	43.00
9-17	10014	Wm. R. Bittenbender	17.00
9-17	10015	A. H. Bakehouse	187.65
9-17	10016	Ruth Baker	5.00
9-17	10017	Mrs. M. A. Bishop	5.00
9-17	10018	Ray F. Bennett	11.00
9-17	10019	Dr. S. L. Beaver	10.00
9-17	10020	Raymond Barrett	6.00
9-17	10021	John Blake	2.00
9-17	10022	G. D. Black	27.00
9-17	10023	Mrs. L. Bicker	5.00
9-17	10024	H. E. Brown	25.00
9-17	10025	M. L. Beaven	9.50
9-17	10026	Ethel Baird	.50
9-17	10027	Lula Baird	5.00
9-17	10028	Mrs. E. O. Boe	2.00
9-17	10029	Warren E. Beebe	22.00
9-17	10030	Marjorie A. Bush	10.00
9-17	10031	Mrs. G. H. Botsford	2.00
9-17	10032	Armien Bruns	12.00
9-17	10033	Mary Brigham	1.00
9-17	10034	Vera Betts	18.00
9-17	10035	Alice Badgley	1.00
9-17	10036	Mrs. Harry C. Byers	1.00
9-17	10037	A. Bongers	5.00
9-17	10038	Mrs. C. F. Burridge	1.00
9-17	10039	E. M. Cassady & Son	208.00
9-17	10040	W. S. Corsa	585.00
9-17	10041	G. A. Chaffee	97.00
9-17	10042	Fred Crawford	15.00
9-17	10043	W. H. Chapman	5.26
9-17	10044	S. B. Cooksley	8.42
9-17	10045	Wib F. Clements	31.00
9-17	10046	R. E. Clemons	13.67
9-17	10047	Erve A. Cole	7.37
9-17	10048	Willes F. Conway	1.05
9-17	10049	Dr. L. D. Carpenter	10.00
9-17	10050	E. Z. Carr	2.10
9-17	10051	J. A. Crowther	5.26
9-17	10052	W. O. Coon	9.00
9-17	10053	E. O. Corss	3.00
9-17	10054	Ida M. Chubb	42.25
9-17	10055	A. L. Chamberlain	2.50
9-17	10056	J. E. Cornwell	20.78
9-17	10057	Margaret Cornwell	3.00

9-17	10058	Mrs. Mary Campbell	1.00
9-17	10059	Mrs. Geo. C. Cooper	.50
9-17	10060	Chris Christensen	1.05
9-17	10061	F. C. Colby	7.00
9-17	10062	Aimee Camel	4.50
9-17	10063	Linn Culbertson	45.00
9-17	10064	Mrs. E. M. Cross	5.00
9-17	10065	Mrs. L. H. Curran	56.50
9-17	10066	Marjorie Connor	19.00
9-17	10067	Mrs. F. A. Campbell	2.00
9-17	10068	Mrs. Robt. Carlile	4.00
9-17	10069	Lucile Copper	2.00
9-17	10070	June Collins	11.00
9-17	10071	Mrs. M. A. Canine	1.00
9-17	10072	Miss Ruby Cain	4.50
9-17	10073	Mrs. Anna Cain	2.50
9-17	10074	Mrs. E. A. Crapsey	9.50
9-17	10075	W. F. Clifford	3.00
9-17	10076	Eileen Coffee	2.00
9-17	10077	Chas. C. Cook	12.00
9-17	10078	C. A. Day	2.10
9-17	10079	Dunn Bros.	1.00
9-17	10080	Arthur Dearinger	15.00
9-17	10081	Carl Dare	14.00
9-17	10082	Ray L. Doore	22.00
9-17	10083	N. O. Dahleen	8.42
9-17	10084	A. J. Doore	10.00
9-17	10085	O. A. Decker	2.00
9-17	10086	Clifford W. Duke	6.00
9-17	10087	Mrs. E. Hughes Dukehart	4.00
9-17	10088	M. L. Dudley	10.00
9-17	10089	Helen Deets	49.50
9-17	10090	A. J. Doleschal	3.15
9-17	10091	Mrs. D. Downey	6.00
9-17	10092	Ida C. Dalton	5.00
9-17	10093	M. J. Donavan	5.26
9-17	10094	Mrs. W. L. DeClow	10.00
9-17	10095	Wm. Danner	9.00
9-17	10096	Mrs. Robert Dormer	6.00
9-17	10097	J. M. Dillow	2.00
9-17	10098	Miss Pearl Denny	15.00
9-17	10099	Mary Dixon	1.00
9-17	10100	J. C. Ewing	50.00
9-17	10101	R. J. Erb	5.26
9-17	10102	Mrs. J. C. Elliott	3.00
9-17	10103	J. W. Eral	18.00
9-17	10104	Harry Eral	8.00
9-17	10105	J. W. Engel	4.21
9-17	10106	J. Martin Erickson	5.00

9-17	10107	W. E. Evens	3.00
9-17	10108	F. F. Everett	24.00
9-17	10109	N. C. Erickson	13.67
9-17	10110	Mrs. Retta Ellis	1.00
9-17	10111	Mrs. A. H. Eichenlaub	18.00
9-17	10112	Miss Lucile Eichenlaub	6.00
9-17	10113	Miss Lula Eichenlaub	10.50
9-17	10114	Mrs. C. J. Eller	15.00
9-17	10115	Ellen M. Ellis	2.00
9-17	10116	H. H. Ford	115.00
9-17	10117	Nellie Fabyan	10.00
9-17	10118	A. L. Foster	5.00
9-17	10119	Helen Feldman	.50
9-17	10120	Alice Fredrickson	8.00
9-17	10121	Mrs. T. J. Flora	52.00
9-17	10122	Mrs. Anna B. Frost	47.00
9-17	10123	Tom Finnegan	17.00
9-17	10124	John Finnegan	15.00
9-17	10125	L. L. Flickinger	7.37
9-17	10126	Caroline Forney	2.00
9-17	10127	Mrs. E. H. Fagg	1.00
9-17	10128	H. L. Felter	55.50
9-17	10129	Mrs. J. C. Fuson	2.00
9-17	10130	W. E. Graham	25.00
9-17	10131	G. J. Gudknecht	7.36
9-17	10132	Jno. Graham & Son	100.00
9-17	10133	L. M. Griffin	15.00
9-17	10134	H. A. Griese	10.52
9-17	10135	Mrs. A. C. Griffith	1.00
9-17	10136	C. E. Graff	.50
9-17	10137	Mrs. Frank Grant	29.00
9-17	10138	Clayton Garrett	128.88
9-17	10139	Mary J. Gaylord	11.00
9-17	10140	Mrs. J. E. Grant	3.00
9-17	10141	Bertha D. Greubel	22.00
9-17	10142	Nell Greaney	11.00
9-17	10143	Henry George	12.00
9-17	10144	Mrs. Geo. M. Grinstead	24.00
9-17	10145	Alma Grinstead	32.00
9-17	10146	Maisy Grinstead	40.00
9-17	10147	Mrs. J. C. Gingery	1.50
9-17	10148	Mrs. A. M. Guthrie	4.00
9-17	10149	Chas. O. Garrett	240.50
9-17	10150	W. W. Gwinn	53.33
9-17	10151	Myrtle A. Gabriel	3.50
9-17	10152	Mrs. Jas. Grinstead	4.00
9-17	10153	Mrs. C. L. Gay	31.50
9-17	10154	Geo. M. Grinstead	50.00
9-17	10155	L. E. Gibson	14.00

9-17	10156	Mrs. Clara Goings	2.00
9-17	10157	Mrs. J. W. Graves	2.00
9-17	10158	Mrs. Lou Gamrath	5.00
9-17	10159	Fred H. Hassler	8.00
9-17	10160	O. Harris	313.00
9-17	10161	J. L. Howard	40.00
9-17	10162	R. M. Halford	12.00
9-17	10163	L. S. Huntley & Son	25.00
9-17	10164	Henry Hansen	15.80
9-17	10165	W. V. Hixson	345.00
9-17	10166	W. A. Hook	12.00
9-17	10167	Jas. Hethershaw	130.00
9-17	10168	W. P. Hughes	7.37
9-17	10169	C. E. Hiatt	40.00
9-17	10170	G. W. Howard	3.00
9-17	10171	Frank Harker	35.00
9-17	10172	L. W. Harkens	15.00
9-17	10173	Carl Hovland	11.57
9-17	10174	Ott Hicks	1.05
9-17	10175	John Newman Hicks	1.05
9-17	10176	E. Heydon	28.00
9-17	10177	Mrs. W. H. Harwood	14.00
9-17	10178	Kolburn Hegna	13.00
9-17	10179	Weir Hart	22.50
9-17	10180	Peter Hove	12.00
9-17	10181	C. M. Hummer	3.00
9-17	10182	C. W. Howell	13.00
9-17	10183	J. F. Harsh	10.00
9-17	10184	Hansons Poultry Farm	47.00
9-17	10185	Harry Hilton	2.00
9-17	10186	Frank Hilton	8.00
9-17	10187	Carl Holden	41.00
9-17	10188	Mrs. K. Hegna	5.00
9-17	10189	N. J. Harris	13.00
9-17	10190	Mrs. G. B. Hippee	13.20
9-17	10191	F. O. Harrington	86.00
9-17	10192	F. H. Harms	2.10
9-17	10193	Mrs. W. L. Hestwood	3.00
9-17	10194	Mrs. Sarah Hillon	1.00
9-17	10195	S. S. Hudson	4.21
9-17	10196	R. M. Howard	3.00
9-17	10197	Anna Hansen	1.00
9-17	10198	Lorenes Hines	4.00
9-17	10199	Pauline Holland	5.00
9-17	10200	S. E. Harker	16.00
9-17	10201	D. E. Henry	4.00
9-17	10202	Iowana Farms	125.00
9-17	10203	Iowana Farms	151.00
9-17	10204	Iowana Farms	16.00

9-17	10205	Chas. Irvine	266.00
9-17	10206	Iowa Seed Co.	398.00
9-17	10207	C. F. Jones	6.00
9-17	10208	Jno. Justice	105.77
9-17	10209	Jno. H. Jennings	111.00
9-17	10210	J. H. Jensen	7.37
9-17	10211	Chris Jessen	4.21
9-17	10212	M. J. Jorgenson	4.00
9-17	10213	James H. Jones	10.00
9-17	10214	Joe Johnson	1.00
9-17	10215	Carl Jorgenson	2.10
9-17	10216	Isaac Johnson	73.50
9-17	10217	Chris Jensen	1.05
9-17	10218	Frank Johnson	20.00
9-17	10219	Walter D. Jensen	13.00
9-17	10220	M. S. Jones	14.00
9-17	10221	Mrs. C. M. Johnesse	4.00
9-17	10222	Mrs. E. J. Johnson	7.00
9-17	10223	W. E. Kingdon	35.00
9-17	10224	Joe Kramer	56.60
9-17	10225	Krizer Bros.	18.00
9-17	10226	Mrs. M. Kastberg	58.50
9-17	10227	T. H. Kaldenberg	3.50
9-17	10228	Frances Keffer	75.00
9-17	10229	F. H. Kelling	9.47
9-17	10230	Fannie M. Klinck	174.15
9-17	10231	Mrs. Clara Kaup	3.50
9-17	10232	W. O. Knapp	26.00
9-17	10233	Ella Kock	30.50
9-17	10234	Mary Kegley	9.50
9-17	10235	Mrs. Frank Kuble	3.00
9-17	10236	Henry Lauer	118.00
9-17	10237	H. W. Littleton	42.00
9-17	10238	Fred F. Lockwood	8.42
9-17	10239	J. A. Laughridge	20.00
9-17	10240	J. W. Love	3.00
9-17	10241	Linn Hill Park Stock Farm	15.00
9-17	10242	W. F. Lyon	132.67
9-17	10243	W. F. Lyon	49.00
9-17	10244	Chris Lundhay	14.75
9-17	10245	Ellwyn Lucas	19.00
9-17	10246	G. F. Lanquist	10.52
9-17	10247	Wm. J. Lockhart	11.00
9-17	10248	R. A. Lundberg	5.00
9-17	10249	Fred Lehman	2.10
9-17	10250	H. C. Ladage	7.37
9-17	10251	R. H. Longworth	66.00
9-17	10252	Lozier, The Florist	202.00
9-17	10253	J. Russell Long	1.00

9-17	10254	Mary E. Lowe	9.00
9-17	10255	O. O. Lomen	16.50
9-17	10256	Marie O. Lomen	44.40
9-17	10257	Mrs. Eva Livingstone	6.00
9-17	10258	Mrs. Chas. Lehman	7.00
9-17	10259	Martha Leuty	14.00
9-17	10260	Jennie Leuty	12.00
9-17	10261	Harral A. Longworth	51.00
9-17	10262	Minnie Lewis	43.80
9-17	10263	Marguerite Lambert	12.00
9-17	10264	Mrs. R. A. Lewis	72.20
9-17	10265	N. B. Lathrop	26.00
9-17	10266	Effie Lewton	5.00
9-17	10267	Harry Livingood	50.00
9-17	10268	G. F. Marshall & Son	2.00
9-17	10269	J. A. Mason	26.00
9-17	10270	Wilmoth C. Mack	2.00
9-17	10271	F. A. Mathis	3.00
9-17	10272	E. Mittlestadt	7.37
9-17	10273	J. N. B. Miller	35.00
9-17	10274	Morris & Co.	125.00
9-17	10275	F. Morasco	10.50
9-17	10276	H. R. Malone	191.17
9-17	10277	Fred McCullough	176.91
9-17	10278	Thos. E. Morlan	20.00
9-17	10279	J. C. Mawdsley	8.00
9-17	10280	J. W. Moore	1.50
9-17	10281	Ernest Massey	2.00
9-17	10282	Catherine M. Macartney	60.00
9-17	10283	Mrs. Richard Manning	64.00
9-17	10284	W. E. Middlestadt	12.63
9-17	10285	L. G. Miller	17.50
9-17	10286	Ed R. Mawdsley	38.00
9-17	10287	Mrs. B. A. Matthews	44.00
9-17	10288	C. E. Malone	244.27
9-17	10289	Chris Morck	7.36
9-17	10290	Beatrice Mansfield	9.00
9-17	10291	F. I. Moore	12.00
9-17	10292	Mrs. C. N. Mutchler	9.00
9-17	10293	Wm. Matters	3.15
9-17	10294	Miss Anna M. Meyer	17.00
9-17	10295	M. A. Moore	19.00
9-17	10296	Harriett Macy	64.50
9-17	10297	Emily L. Morgan	2.00
9-17	10298	M. E. Myers	2.00
9-17	10299	Alden Moore	12.00
9-17	10300	Mrs. A. D. Moore	2.00
9-17	10301	Mrs. E. M. Mann	2.00

9-17	10302	Georgia Mann	1.00
9-17	10303	C. E. Mincer	172.45
9-17	10304	Mrs. C. E. Mincer	22.00
9-17	10305	Mrs. E. P. Murrow	7.00
9-17	10306	D. W. Mohler	8.42
9-17	10307	B. L. Marshall	5.50
9-17	10308	Forest B. Myers	5.00
9-17	10309	William Macy	3.00
9-17	10310	Fritz Mathis	2.00
9-17	10311	W. A. McHenry	420.00
9-17	10312	Geo. McCray	158.00
9-17	10313	Geo. McKerrow & Sons Co.	294.00
9-17	10314	Warren T. McCray	291.00
9-17	10315	McLay Bros.	193.00
9-17	10316	Geo. T. McCannon	34.00
9-17	10317	Wm. McMichael	1.00
9-17	10318	J. R. McDonald	12.00
9-17	10319	Dora McLain	13.00
9-17	10320	M. F. McGovern	7.00
9-17	10321	F. E. McCall	55.06
9-17	10322	D. M. McArthur	25.00
9-17	10323	Arthur McArthur	8.00
9-17	10324	Mrs. Ada Borne Newquist	29.00
9-17	10325	H. K. Nelson	8.42
9-17	10326	Anamariel Nelson	3.00
9-17	10327	Mrs. Howard Niswander	2.50
9-17	10328	C. C. Nelson	2.10
9-17	10329	Mrs. C. P. Nelson	5.00
9-17	10330	G. W. Nance	40.00
9-17	10331	N. C. Neilson	6.31
9-17	10332	Jno. C. Hol	32.68
9-17	10333	Miller S. Nelson	156.18
9-17	10334	Robert F. Owens	1.05
9-17	10335	O'Donnell Poultry Farm	3.00
9-17	10336	N. Overgaard	2.10
9-17	10337	Mrs. M. E. Orchard	2.50
9-17	10338	Mrs. A. F. Ostrand	1.00
9-17	10339	W. F. Otcheck	251.98
9-17	10340	E. B. Olds	9.47
9-17	10341	James Pedley	40.00
9-17	10342	P. W. Peterson	12.63
9-17	10343	P. M. Peterson	116.45
9-17	10344	Carl Peterson	4.00
9-17	10345	L. C. Peterson	3.15
9-17	10346	J. A. Peterson	13.14
9-17	10347	Chas. M. Pink	20.00
9-17	10348	E. L. Pearson	6.00
9-17	10349	Mrs. W. W. Preston	5.00
9-17	10350	Helen Preston	3.00

9-17	10351	W. H. Plows	168.66
9-17	10352	A. L. Plummer	90.25
9-17	10353	Elliott Purmort	3.00
9-17	10354	C. O. Preston	3.00
9-17	10355	C. H. Peverill	7.00
9-17	10356	Luther R. Pike	3.00
9-17	10357	S. R. Patterson	1.00
9-17	10358	K. L. Price	2.00
9-17	10359	C. D. Porter	4.00
9-17	10360	W. Patterson	10.00
9-17	10361	Ida Perkins	4.00
9-17	10362	Maybelle Perkins	.50
9-17	10363	S. A. Power & Son	22.00
9-17	10364	Mrs. J. A. Peters	12.00
9-17	10365	Mrs. W. J. Porter	2.00
9-17	10366	W. J. Porter	1.00
9-17	10367	Odessa Bea Porter	1.00
9-17	10368	Bertha Z. Phillpot	16.00
9-17	10369	Grace V. Page	4.00
9-17	10370	Claude A. Patterson	20.25
9-17	10371	Mrs. Grant Perkins	6.00
9-17	10372	Tillie Peterson	25.50
9-17	10373	Mrs. W. O. Plummer	13.50
9-17	10374	Jay Pickett	1.00
9-17	10375	Mrs. Milt Person	2.00
9-17	10376	J. J. Proudfit	7.00
9-17	10377	Mrs. J. E. Platner	4.00
9-17	10378	Mrs. E. H. Pickering	14.00
9-17	10379	Vesta Plummer	13.00
9-17	10380	Hazel Plummer	19.00
9-17	10381	I. E. Proudfit	17.00
9-17	10382	Mrs. E. L. Pearson	2.00
9-17	19383	Della Penn	19.00
9-17	10384	Grace Patterson	11.00
9-17	10385	C. I. Payne	7.37
9-17	10386	Mrs. E. E. Ross	53.60
9-17	10387	Rookwood Farm	377.00
9-17	10388	H. A. Rizer	4.21
9-17	10389	W. T. Roberts & Son	12.00
9-17	10390	D. W. Rich	9.00
9-17	10391	I. R. Reed	54.00
9-17	10392	C. J. Rohde	4.21
9-17	10393	Henry Rollinson	122.00
9-17	10394	C. W. Reeder	8.50
9-17	10395	Hazel Edith Rhine	1.00
9-17	10396	Mrs. John A. Ryan	49.00
9-17	10397	Wm. A. Radeke	7.00
9-17	10398	Elmer Reed	92.00
9-17	10399	Gail Reed	34.00

9-17	10400	S. O. Riesley	5.26
9-17	10401	R. B. Rowe	11.00
9-17	10402	F. L. Rinehart & Son	60.00
9-17	10403	Idah Russell	15.00
9-17	10404	Fred L. Rynor	25.00
9-17	10405	Mrs. C. A. Rouze	1.50
9-17	10406	Chester Reeves	20.00
9-17	10407	T. L. Ricksecker	29.00
9-17	10408	Oscar Rustad	13.00
9-17	10409	Ray Redfern	25.00
9-17	10410	Floyd Rice	2.00
9-17	10411	Anna Redhead	35.00
9-17	10412	C. Raney	7.50
9-17	10413	Herbert Soballe	9.47
9-17	10414	W. Z. Swallow	37.00
9-17	10415	Mrs. Adam Stirling	99.00
9-17	10416	J. A. Sage	43.00
9-17	10417	E. R. Shaw	30.00
9-17	10418	A. G. Soderberg	334.50
9-17	10419	W. W. Seeley	4.00
9-17	10420	Watson Shick	4.21
9-17	10421	Austin Sasseen	6.00
9-17	10422	S. A. Shetterley	192.31
9-17	10423	Sam Saveriod	12.63
9-17	10424	G. Stuessi	7.37
9-17	10425	B. T. Soles	6.31
9-17	10426	O. B. Stenberg	8.42
9-17	10427	A. W. Snyder	3.15
9-17	10428	Mrs. Merta Steers	13.00
9-17	10429	Mrs. C. O. Seaman	2.00
9-17	10430	Wm. Steemyk	25.00
9-17	10431	W. N. Servis	1.00
9-17	10432	H. C. Stendel	9.47
9-17	10433	Jas. L. Stark	3.00
9-17	10434	Anthony Stocker	9.50
9-17	10435	I. S. Stocker	2.00
9-17	10436	Hannah L. Snyder	1.00
9-17	10437	N. I. Seibert	1.00
9-17	10438	Schuster Bros	25.50
9-17	10439	Julius Sinn	16.00
9-17	10440	B. D. Smith	24.50
9-17	10441	Irene Stoutenburg	8.00
9-17	10442	J. C. Sandmier	2.00
9-17	10443	Mrs. Horace Susong	3.00
9-17	10444	Hazel Snyder	5.50
9-17	10445	Phillip Sauers	7.00
9-17	10446	Margaret Snyder	2.50
9-17	10447	Mrs. Alice Seymour	73.00
9-17	10448	Mrs. S. Stutsman	23.20

9-17	10449	Thos. Sadler	7.37
9-17	10450	Miss Mary Spencer	8.00
9-17	10451	Mrs. C. N. Smith	8.00
9-17	10452	Miss Edith Sweet	2.00
9-17	10453	Sestier Bros.	69.00
9-17	10454	Mrs. J. D. Stoutenburg	7.00
9-17	10455	Silvis H. Stamm	5.00
9-17	10456	Mrs. H. M. Stone	13.00
9-17	10457	A. F. Snedeker	7.00
9-17	10458	Henry Sprenger	6.31
9-17	10459	Edith Smith	1.00
9-17	10460	Mrs. Louise M. Smith	16.50
9-17	10461	Mrs. E. C. Sturman	5.00
9-17	10462	B. Stuart	100.06
9-17	10463	Mrs. B. Stuart	2.00
9-17	10464	Anton Smith	10.52
9-17	10465	Mrs. Earl Sweeney	11.00
9-17	10466	Emma Stuart	1.00
9-17	10467	Helen Secor	1.00
9-17	10468	Mrs. Frank Smith	6.50
9-17	10469	Mason Stuart	3.00
9-17	10470	Eliza Stewart	17.00
9-17	10471	Mrs. Casper Schenk	11.00
9-17	10472	Daisy Slemmons	1.00
9-17	10473	Mrs. D. H. Sleeper	3.00
9-17	10474	Mrs. Violet Sefton	6.00
9-17	10475	Rudolph Schmidt	7.00
9-17	10476	G. P. Sauer	4.21
9-17	10477	I. Ross Thompson	15.00
9-17	10478	D. Tietjen	332.00
9-17	10479	E. B. Thomas	3.00
9-17	10480	Cyrus A. Tow	552.00
9-17	10481	J. W. Thompson	45.00
9-17	10482	C. O. Thornburg	2.00
9-17	10483	Trumans Pioneer Stud Farm	483.00
9-17	10484	Thos. Thompson	3.00
9-17	10485	C. H. True	90.00
9-17	10486	Lillian M. Thornton	25.50
9-17	10487	J. L. Todd	107.00
9-17	10488	Mrs. Thompson	25.00
9-17	10489	Elizabeth Tavener	1.00
9-17	10490	Ella M. Trowbridge	30.00
9-17	10491	Minta I. Teeney	3.00
9-17	10492	Mrs. W. D. Tapp	17.00
9-17	10493	Marjorie Tapp	8.00
9-17	10494	M. J. Thomas	9.50
9-17	10495	Ed. R. Trites	33.00
9-17	10496	Wm. Trillow	232.00
9-17	10497	Mrs. Miles Tatham	1.00

9-17	10498	W. E. Utterback	18.00
9-17	10499	Mack Utterback	52.00
9-17	10500	C. & C. T. Van Lint	15.00
9-17	10501	Wm. F. Volz	17.00
9-17	10502	Amos Vogt	2.00
9-17	10503	Van Meter & Caldwell	9.00
9-17	10504	Mrs. R. H. Vogel	5.00
9-17	10505	J. F. Van der Meer	4.21
9-17	10506	Mrs. Bessie Walker	5.00
9-17	10507	Hosea Wilson	12.00
9-17	10508	Fred Williams	35.00
9-17	10509	E. C. Wilson	10.00
9-17	10510	L. C. West	18.00
9-17	10511	Peder Windfeldt	2.10
9-17	10512	Louise Webster	14.00
9-17	10513	H. H. Whiting	7.37
9-17	10514	F. D. Warner	13.67
9-17	10515	Flora Wolter	5.50
9-17	10516	Wm. P. Watson	1.00
9-17	10517	Emma Wolter	39.00
9-17	10518	Mrs. M. C. Wallace	5.00
9-17	10519	R. E. West	101.50
9-17	10520	James Woodward	5.00
9-17	10521	Mrs. Margaret Waite	8.00
9-17	10522	J. M. Williamson	32.00
9-17	10523	V. G. Warner	75.50
9-17	10524	A. M. Walrath	23.00
9-17	10525	J. I. Wilson Floral Co.	134.00
9-17	10526	J. C. Watts	4.00
9-17	10527	Marvin Wills	2.00
9-17	10528	Geo. S. Woodruff	22.00
9-17	10529	Irene Wilson	22.00
9-17	10530	Estelle D. Weiny	18.00
9-17	10531	Edna A. Whitler	18.00
9-17	10532	Hazelle Wheeler	2.00
9-17	10533	Frank W. Hood	2.00
9-17	10534	R. G. Whartin	12.00
9-17	10535	Kenneth West	2.00
9-17	10536	Miss Minnie West	2.00
9-17	10537	Mrs. J. M. Wadsley	2.00
9-17	10538	Marie Wagner	7.50
9-17	10539	T. E. Ward	8.00
9-17	10540	Mrs. Dan Williams	2.00
9-17	10541	Mrs. Sallie Wimmer	12.00
9-17	10542	M. E. Winters	3.00
9-17	10543	Carmolite Waldo	1.00
9-17	10544	Mrs. Wm. Wyant	2.00
9-17	10545	Pearl Woods	2.00
9-17	10546	M. J. Wragg	16.49

9-17	10547	Mrs. Lillian White	6.00
9-17	10548	Mrs. Ella Wells	11.00
9-17	10549	W. N. Wayne	2.00
9-17	10550	Jas. Yuill	3.48
9-17	10551	Jas. Yuill	1.52
9-17	10552	F. M. Zell	5.26
9-17	10553	Willard Zeller	65.00
9-17	10554	Joe Johnson	10.00
9-17	10555	Fred Sidener	5.00
9-17	10556	Robert Miller Scott	60.00
9-17	10557	John Waddell, Jr.	5.00
9-17	10558	Marjorie Ford	10.00
9-17	10559	Mildred Allen	5.00
9-17	10560	Alice Millstein	10.00
9-17	10561	Beatrice Karns	5.00
9-17	10562	Homer P. Howell	10.00
9-17	10563	Duane Shaw	5.00
9-17	10564	John R. Brownlee	10.00
9-17	10565	Sam Grey	5.00
9-17	10566	Arline Caroline Johnstone	10.00
9-17	10567	Marion Stanley	5.00
9-17	10568	Mary Fuson	10.00
9-17	10569	Genevieve Tufel	5.00
9-17	10570	Chas. Brown	10.00
9-17	10571	Walter Kuhlmon, Jr.	5.00
9-17	10572	Ralph McNeeley	10.00
9-17	10573	James Robinson	5.00
9-17	10574	Frances Shutts	10.00
9-17	10575	Winifred Miller	5.00
9-17	10576	"Peaches" Klusmeyer	60.00
9-17	10577	Margaret Blake	5.00
9-17	10578	Mrs. Nat Thompson	2.00
9-17	10579	M. L. Dudley	2.00
9-17	10580	Mrs. E. P. Morrow	2.00
9-17	10581	Mary G. Cretzmeyer, Supt.	6.00
9-17	10582	W. W. Ballard, Supt.	2.00
9-17	10583	Angus McDonald, Supt.	22.00
9-17	10584	Carolyn Forgrave, Supt.	28.00
9-17	10585	June Chidester, Supt.	10.00
9-17	10586	Myrtle Dungan, Supt.	5.00
9-17	10587	A. Palmer, Supt.	111.00
9-17	10588	F. W. Cramer, Supt.	27.00
9-17	10589	Z. C. Thornburg, Supt.	151.00
9-17	10590	Jennie Steele Huegle, Supt.	45.00
9-17	10591	F. W. Hicks, Supt.	6.00
9-17	10592	Mary A. Richards, Supt.	17.00
9-17	10593	Marjorie Bush	2.00
9-17	10594	W. F. Roberts & Son	2.00
9-17	10595	Leigh Pickering	2.00

9-17	10596	Iowa State College, Scholarships	525.00
9-17	10597	Iowa State College, Scholarships	75.00
9-17	10598	Morris & Co.	300.00
9-17	10599	A. A. Burger	50.00
9-17	10600	Claude A. Patterson	1.00
9-17	10601	Emanuel Peterson	3.00
9-17	10602	B. A. Mathews	33.50
9-17	10603	A. W. Cates	50.00
9-17	10604	T. H. Kaldenberg	25.00
9-17	10605	Vickery Kennels	15.00
10-31	10606	Wm. Messer	10.00
		Total	$ 58,139.15

EXPENSE WARRANTS ISSUED DECEMBER 1, 1911—NOVEMBER 30, 1912.

12-13	9239	A. L. Sponsler, railroad fare and expenses, speaker annual agricultural convention	$ 30.90
12-16	9240	C. E. Cameron, per diem and mileage, annual meeting	38.00
12-16	9241	O. A. Olson, per diem and mileage, annual meeting	39.50
12-16	9242	R. S. Johnston, per diem and mileage, annual meeting	39.80
12-16	9243	C. W. Phillips, per diem and mileage, annual meeting	45.00
12-16	9244	Elmer M. Reeves, per diem and mileage, annual meeting	36.30
12-16	9245	E. J. Curtin, per diem and mileage, annual meeting	43.50
12-16	9246	E. M. Wentworth, per diem and mileage, annual meeting	30.00
12-16	9247	T. C. Legoe, per diem and mileage, annual meeting	20.50
12-16	9248	C. F. Curtiss, per diem and mileage, annual meeting	27.30
12-16	9249	F. E. Sheldon, per diem and mileage, annual meeting	36.30
12-16	9250	J. F. Summers, per diem and mileage, annual meeting	40.00
12-16	9251	J. P. Mullen, per diem and mileage, annual meeting	35.70
12-16	9252	H. L. Pike, per diem and mileage, annual meeting.	44.00
12-16	9253	R. S. Johnston, expenses attending meeting American Association of Fairs and Expositions, Chicago	22.65
12-16	9254	E. M. Wentworth, expenses attending meeting American Association of Fairs and Expositions, Chicago	23.98
12-16	9255	H. L. Pike, expenses attending meeting American Association of Fairs and Expositions, Chicago	33.82

12-16	9256	A. R. Corey, expenses attending meeting American Association of Fairs and Expositions, Chicago..		28.75
12-16	9257	C. E. Cameron, expenses attending meeting American Association of Fairs and Expositions, Chicago		33.01
12-18	9258	A. R. Corey, Sec., pay roll No. 1, (grounds): November 28-December 9, inclusive.		
		F. M. McCoy and team, labor on grounds, 12 days, at $4.00..........$	48.00	
		Ralph Cressler, labor on grounds, 18 days, at $1.75	31.50	
		J. J. Whitmer, labor on grounds, 15 days, at $2.00	30.00	
				109.50
12-19	9259	Peter Hopley & Son, 1st premium Belgian Futurity 1911		100.00
12-19	9260	Peter Hopley & Son, 1st premium Lefebure Special 1911		40.00
12-19	9261	Frank Huttenlocher to cover old premium warrants, issue of 1893-1894..........		6.00
12-19	9262	J. R. Peak & Son, refund on fine, 1911 fair.......		75.00
12-19	9263	Caslon Printing Co., miscellaneous printing.....		13.50
12-19	9264	O. A. Olson, expenses attending meeting American Association of Fairs and Expositions, Chicago.		37.05
12-19	9265	E. J. Curtin, expenses attending meeting American Association of Fairs and Expositions, Chicago		35.60
1- 3	9266	C. A. Nash, salary December, 1911..............		100.00
1- 3	9267	Elsie Colton, salary December, 1911		100.00
1- 3	9268	J. H. Deemer, salary December, 1911............		83.33
1- 4	9269	C. L. Dahlberg, 1M duplicate letters Pioneer Day, 1911		4.25
1- 5	9270	Hal Edwards, shoeing mule team, grounds......		4.00
1- 6	9271	W. Burzacott, scale book forage department.....		.25
1- 6	9272	Register & Leader Co., advertising power plant equipment for sale		11.88
1- 6	9273	Electrical Review Co., advertising power plant equipment for sale		18.00
1- 6	9274	Des Moines Capital, advertising power plant equipment for sale		11.76
1- 6	9275	Robt. F. Hildebrand, 57 photos, 1911 fair........		39.50
1- 6	9276	A. R. Corey, Secy., pay roll No. 2 (grounds): December 11-December 30, inclusive.		
		Ed McKowan, cutting wood, 7 days, 4½ hours, at $2.00 ....$	14.90	
		Ralph Cressler, hauling cinders, 12 days, at $1.75	21.00	
				35.90

1- 6	9277	Eugene Dietzgen Co., 15 brown line prints, ground plans		23.24
1-10	9278	Wellman "Advance," country newspaper advertising 1911		6.60
1-11	9279	A. R. Corey, Secy., pay roll No. 3 (grounds): January 1-January 14, inclusive.		
		Chas. Newell, shoveling snow, 41½ hours at 20c....$	8.30	
		Henry Grandgeorge, shoveling snow, 36½ hours at 20c	7.30	
		Glen Wilson, shoveling snow, 4 hours at 20c	.80	
		O. J. Wilson, shoveling snow, 52½ hours at 20c	10.50	
		D. B. Hughes, shoveling snow 42 hours at 20c	8.40	
		S. T. Wilson, shoveling snow, 55½ hours at 20c	11.10	
		I. J. Whitmer, shoveling snow, 57½ hours at 20c	11.50	
		Ed McKowan, shoveling snow, 48½ hours at 20c	9.70	
		Frank Maricle, shoveling snow, 44½ hours at 20c	8.90	
		Chas. Brennan, shoveling snow, 44½ hours at 20c	8.90	
		Wm. Wilkins, shoveling snow, 9½ hours at 20c	1.90	
		H. S. Williams, shoveling snow, 29½ hours at 20c	5.90	
		George Whitney, shoveling snow, 68½ hours at 20c	13.70	
				106.90
1-16	9280	A. R. Corey, Secy., pay roll No. 4 (grounds): Coops and Cinder Hauling.		
		F. McCoy, hauling cinders, 7 loads at 90c....$	6.30	
		F. McCoy, hauling coops, 3 days at $3.60	10.80	
		Ralph Cressler, hauling coops and cinders, 12 days at $1.75	21.00	
		F. McCoy, hauling cinders, 41 loads at 90c	36.90	
				75.00
1-17	9281	Interstate Realty Co., additional land		1,200.00
1-25	9282	Billboard Publishing Co., subscription 2-4-12 to 2-4-13		4.00
1-25	9283	American Shire Horse Association, Vol. 6-7, American Shire Horse Stud Book		3.00

1-25	9284	Corn Belt Meat Producers Association, pro rata share expense, speakers, and reporting, December meeting		33.22
1-27	9285	C. E. Cameron. per diem and mileage, executive committee meeting		30.00
1-27	9286	O. A. Olson, per diem and mileage, executive committee meeting		31.50
1-27	9287	Louis Kurtz, P. M., postage for board		50.00
1-30	9288	Interstate Realty Co., additional land		325.00
1-30	9289	A. R. Corey, Secy., pay roll No. 5 (grounds):		
		January 14-January 27, inclusive.		
		Ralph Cressler, hauling cinders and coops, 12 days at $1.75	$ 21.00	
		Glen Wilson, hauling coops, 2 days at $2.00	4.00	
		F. McCoy, hauling coops, 2 days at $2.00	4.00	
				29.00
2- 3	9290	C. A. Nash. salary January, 1912		100.00
2- 3	9291	Elsie Colton, salary January, 1912		100.00
2- 3	9292	J. H. Deemer, salary January, 1912		100.00
2- 3	9293	Minnie Anderson, extra clerk, 24 days, January 1912		50.32
2- 3	9294	Des Moines Electric Co., balance on electrical supplies, light system, 1911		358.23
2- 3	9295	A. R. Corey, Secy., pay roll No. 6 (grounds):		
		Cinder Hauling.		
		Ralph Cressler, hauling cinders, 12 days at $1.75	$ 21.00	21.00
2-16	9296	Inter State Realty Co., additional land		125.00
2-16	9297	Inter State Realty Co., additional land		1,000.00
2-19	9298	A. R. Corey, Secy., pay roll No. 7 (grounds):		
		Cinder Hauling.		
		Arthur Brown, hauling cinders, 4 loads at 90c	$ 3.60	
		Arthur Brown, hauling cinders, 8 loads at 90c	7.20	
				10.80
2-20	9299	Inter State Realty Co., additional land		320.00
2-20	9300	Inter State Realty Co., additional land		200.00
2-20	9301	Inter State Realty Co., additional land		450.00
2-28	9302	A. R. Corey, Secy., pay roll No. 8 (grounds):		
		February 8-February 24, inclusive.		
		Ralph Cressler, cinder hauling, 12 days at $1.75	$ 21.00	
		John Potts, cinder hauling, 17 loads, at 90c	15.30	

		J. L. Moyer, cinder hauling, 22 loads, at 90c	19.80	
		J. L. Moyer, cinder hauling, 59 loads, at 90c	53.10	
		Wm. Hirschman, cinder hauling, 24 loads, at 90c	21.60	
		Wm. Hirschman, cinder hauling, 16 loads, at 90c	14.40	
		Gus Theil, cinder hauling, 12 loads, at 90c	10.80	
		J. E. Funk, cinder hauling, 38 loads, at 90c	34.20	
		I. B. Brown, cinder hauling, 34 loads, at 90c	30.60	
				220.80
2-28	9303	H. L. Pike, per diem and mileage, meeting premium list revision committee		32.00
2-29	9304	R. S. Johnston, per diem and mileage, meeting premium list revision committee		27.80
2-29	9305	C. A. Nash, salary February, 1912		100.00
2-29	9306	Elsie Colton, salary February, 1912		100.00
2-29	9307	J. H. Deemer, salary February, 1912		100.00
2-29	9308	Minnie Anderson, extra clerk February, 1912		65.00
2-29	9309	A. R. Corey, expense attending meeting Iowa, Nebraska and South Dakota circuit, Sioux City		17.50
2-29	9310	C. E. Cameron, expense attending meeting Iowa, Nebraska and South Dakota circuit, Sioux City.		10.04
2-29	9311	C. E. Cameron, per diem and mileage, executive committee meeting		26.00
2-29	9312	McCray Sign Shop, signs, Pioneer Day, 1911		15.20
3- 1	9313	R. L. Polk & Co., 1912 city directory		7.00
3- 2	9314	Hal Edwards, shoeing team, grounds		3.75
3- 9	9315	Ora Iseminger, 88 bushels corn, feed for mule and horse teams, grounds		56.32
3-11	9316	Inter State Realty Co., additional land		350.00
3-11	9317	A. R. Corey, Secy., pay roll No. 9 (grounds):		
		February 24-March 9, inclusive.		
		H. Grandgeorge, labor on grounds, 2 days, at $2.50 $	5.00	
		Aleck McGregor, labor on grounds, 5 days, 9 hours, at $2.00	13.80	
		Edward Deemer, labor on grounds, 6 days, at $2.00	12.00	
		Ed McKowan, labor on grounds, 5 days, 1½ hours, at $2.00	10.30	
		J. I. Whitmer, labor on grounds, 9 days, at $2.00	18.00	

		Ralph Cressler, labor on grounds, 12 days, at $1.75	21.00	
				80.10
3-12	9318	C. E. Cameron, per diem and mileage, board meeting		26.00
3-12	9319	O. A. Olson, per diem and mileage, board meeting		27.50
3-12	9320	R. S. Johnston, per diem and mileage, board meeting		27.80
3-12	9321	C. W. Phillips, per diem and mileage, board meeting		33.00
3-12	9322	Elmer M. Reeves, per diem and mileage, board meeting		24.30
3-12	9323	E. J. Curtin, per diem and mileage, board meeting		31.50
3-12	9324	E. M. Wentworth, per diem and mileage, board meeting		18.00
3-12	9325	T. C. Legoe, per diem and mileage, board meeting		20.50
3-12	9326	C. F. Curtiss, per diem and mileage, board meeting		15.70
3-12	9327	John P. Mullen, per diem and mileage, board meeting		23.70
3-12	9328	H. L. Pike, per diem and mileage, board meeting.		32.00
3-12	9329	O. A. Olson, expense attending meeting Iowa, Nebraska and South Dakota circuit, Sioux City		18.16
3-12	9330	E. J. Curtin, expense attending meeting Iowa, Nebraska and South Dakota circuit, Sioux City		20.37
3-14	9331	Iowa Telephone Co., exchange service and toll calls, Oct., Nov., Dec., 1911, Jan., Feb., 1912		17.40
3-15	9332	Louis Kurtz, P. M., postage		40.00
3-15	9333	Iowa Press Clipping Bureau, clippings Oct. 11, 1911, to March 11, 1912		20.00
3-27	9334	C. E. Cameron, expenses attending attraction meeting, Chicago		34.96
3-27	9335	A. R. Corey, Secy., pay roll No. 10 (grounds):		
		March 6-20, inclusive.		
		Sam Grylls, shoveling snow, 2 days at $2.00	$ 4.00	
		Jas. Bennett, labor on grounds, 3 days, 6½ hours, at $2.00	7.30	
		Chas. Newell, labor on grounds, 3 days, 6½ hours, at $2.00	7.30	
		Chas. Branon, labor on grounds, 7 days, 3 hours, at $2.00	14.60	
		E. McKowan, labor on grounds, 9 days, 6 hours, at $2.00	19.20	
		E. H. Deemer, labor on grounds, 3 days, at $2.00	6.00	
		A. McGregor, labor on grounds, 9½ days, at $2.00	19.00	

		H. Grandgeorge, labor on grounds, 10½ days, at $2.50	26.25	
		J. I. Whitmer, labor on grounds, 11½ days at $2.00	23.00	
		Ralph Cressler, labor on grounds, 10 days, at $1.75	17.50	
				144.15
3-30	9336	C. A. Nash, salary March		100.00
3-30	9337	Elsie Colton, salary March		100.00
3-30	9338	J. H. Deemer, salary March		100.00
3-30	9339	Edith K. Smith, salary March		75.00
3-30	9340	Minnie Anderson, extra clerk March		65.00
3-30	9341	Wetherell & Gage, plans and prints, Machinery Hall curbing		10.80
3-30	9342	O. A. Olson, expenses attending attraction meetmeeting, Chicago		46.37
4- 2	9343	O. A. Olson, per diem and mileage, executive committee meeting		27.50
4- 2	9344	C. E. Cameron, per diem and mileage, executive committee meeting		26.00
4- 3	9345	W. C. Brown, expenses attending attraction meeting, Chicago		42.70
4- 3	9346	W. C. Brown, privilege work		20.00
4- 4	9347	Iowa State College, expense account 1911 college exhibit		.75
4- 5	9348	Inter State Realty Co., additional land		400.00
4- 5	9349	Inter State Realty Co., additional land		1,050.00
4- 6	9350	Clifford C. Heer, 6 days extra clerk, April		15.00
4- 6	9351	A. R. Corey, expenses attending Chicago attraction meeting		36.25
4- 6	9352	C. F. Curtiss, per diem and mileage, meeting premium list revision committee		23.10
4-10	9353	A. R. Corey, Secy., pay roll No. 11 (grounds):		
		March 26-April 6, inclusive.		
		Z. A. Oliver, labor on race track, 1 day at $2.00	$ 2.00	
		Chas. Brannen, labor on grounds, 12 days at $2.00	24.00	
		Ralph Cressler, labor on grounds, 12 days at $1.75	21.00	
		Sam Grylls, labor on grounds, 8 days, 2 hrs. at $2.00	16.40	
		H. Grandgeorge, labor on grounds, 10 days at $2.50	25.00	
		J. I. Whitmer, labor on grounds, 12 days at $2.00	24.00	
		H. P. Stouffer, labor on grounds, 1 day at $3.00	3.00	

		J. E. Funk, hauling cinders, 12 loads at 90c	10.80	
		J. L. Moyer, hauling cinders, 52 loads at 90c	46.80	
		E. E. Murphy, labor on race track, 1 day at $2.00	2.00	
		Wm. Hirschman, hauling cinders, 36 loads at 90c	32.40	
		Wm. Hirschman, labor on race track, 1 day at $4.00	4.00	
		Ed McKowan, labor on grounds, 11 days at $2.00	22.00	
		Dan Doughenbaugh, hauling cinders, 6 loads at 90c	5.40	
		Dan Doughenbaugh, labor on race track, 1 day at $4.00	4.00	
				242.80
4-10	9354	American Surety Co., premium Secy's bond 1912.		25.00
4-11	9355	Potts Bros., 1st estimate cement floor work, agricultural hall		600.00
4-12	9356	Tuttle's Letter Shop, 625 multigraph letters and folding 10,000 circulars		7.00
4-12	9357	O. A. Olson, per diem and mileage, executive committee meeting		27.50
4-12	9358	C. E. Cameron, per diem and mileage, executive committee meeting		30.00
4-13	9359	C. F. Curtiss, expenses investigating Hunt Club exhibit		42.45
4-16	9360	Stella Henderson, part payment rent, 10 acres north of grounds		50.00
4-16	9361	Matilda Winterrowd, part payment rent, 10 acres north of grounds		50.00
4-16	9362	Iowa Association Co. and District Fair Managers, pro rata expense annual meeting		7.00
4-19	9363	The Journal-Herald, advertising 1911 fair		7.04
4-19	9364	The Osborne Co., 2,000 monthly calendars		60.00
4-20	9365	J. M. Henderson, 40 bushels corn, feed for mule and horse teams, grounds		24.00
4-25	9366	Potts Bros., 2d estimate cement floor work, agricultural hall		600.00
4-25	9367	A. R. Corey, pay roll No. 12 (grounds):		
		April 7-20 inclusive.		
		Henry Grandgeorge, labor on grounds, 10 days at $2.50	$ 25.00	
		Chas. Brennan, labor on grounds, 9 days at $2.00	18.00	
		George Whitney, foreman, 12 days at $2.25	27.00	

		Dan Doughenbaugh, labor on grounds, 10 days, 4 hrs. at $4.00	41.60	
		I. J. Whitmer, labor on grounds, 12 days at $2.00	24.00	
		E. E. Murphy, labor on grounds, 9 days at $2.00	18.00	
		Sam Grylls, labor on grounds, 11 days at $2.00	22.00	
		Ed McKowan, labor on grounds, 10½ days at $2.00	21.00	
		Earl Doughenbaugh, labor on grounds, 11 days at $2.00	22.00	
		Ralph Cressler, labor on grounds, 12 days at $2.00	24.00	
		Alex McGregor, labor on grounds, 11 days at $2.00	22.00	
		I. B. Brown, labor on grounds, 9 days, 4 hrs. at $4.00	37.60	
		H. P. Stouffer, labor on grounds, 8 days, 2 hrs. at $3.00	24.60	
		Caleb Johns, labor on grounds, 11 days, 7 hrs. at $4.00	46.80	
		Dallas Swartz, labor on grounds, 3 days at $2.00	6.00	
				379.60
4-25	9368	Register & Leader Co., subscription 2-1-12 to 2-1-13		6.00
4-27	9369	C. E. Cameron, per diem and mileage, executive committee meeting		34.00
4-27	9370	O. A. Olson, per diem and mileage, executive committee meeting		31.50
4-27	9371	F. E. Sheldon, special committee work checking over plans, agricultural hall floor		20.30
4-27	9372	J. P. Mullen, special committee work checking over plans, machinery hall floor		23.70
4-27	9373	E. J. Curtin, special committee work, new speed barn		31.50
4-29	9374	Wm. Folk, sharpening disc, grounds		3.00
4-29	9375	Inter State Realty Co., additional land		900.00
4-29	9376	H. M. Jones, second hand manure spreader for grounds		7.00
4-30	9377	C. A. Nash, salary April		100.00
4-30	9378	Elsie Colton, salary April		100.00
4-30	9379	J. H. Deemer, salary April		100.00
4-30	9380	Edith K. Smith, salary April		75.00
4-30	9381	Minnie Anderson, extra clerk April		65.00
4-30	9382	Genevieve Kelly, extra clerk April		65.00
4-30	9383	Helena Lynch, extra clerk, 22½ days, April		56.25
4-30	9384	Cynthia Taylor, extra clerk 19½ days, April		48.75
4-30	9385	Bess Williams, extra clerk 19½ days, April		48.75

4-30	9386	American Association Fairs and Expositions, pro rata expense bill		25.00
5- 4	9387	C. E. Cameron, per diem and mileage, executive committee meeting		26.00
5- 4	9388	O. A. Olson, per diem and mileage, executive committee meeting		27.50
5- 4	9389	C. F. Curtiss, special committee work, opening bids new horse barn		11.70
5- 6	9390	W. C. Brown, privilege work		24.00
5- 6	9391	Louis Kurtz, P. M., postage		60.00
5- 6	9392	Cynthia Taylor, five days extra clerk, May		12.50
5- 7	9393	A. R. Corey, Secy., pay roll No. 13 (grounds): April 21-May 24, inclusive.		
		Chas. Morrison, labor on grounds, 4 days, at $3.50	$ 14.00	
		E. H. Deemer, labor on grounds, 10 days, 6 hours, at $2.00	21.20	
		H. P. Stouffer, labor on grounds, 8 days, 2 hours, at $3.00	24.60	
		Geo. Whitney, foreman, 12 days, at $2.25	27.00	
		Henry Grandgeorge, labor on grounds, 6 days, 6 hours, at $2.50	16.50	
		Chas. Brennan, labor on grounds, 10 days, at $2.00	20.00	
		I. J. Whitmer, labor on grounds, 12 days, at $2.00	24.00	
		E. E. Murphy, labor on grounds, 8 days, at $2.00	16.00	
		Sam Grylls, labor on grounds, 10 days, at $2.00	20.00	
		Ed McKowan, labor on grounds, 11 days, 5 hours, at $2.00	23.00	
		E. Doughenbaugh, labor on grounds, 11 days, at $2.00	22.00	
		Alex McGregor, labor on grounds, 5 days, at $2.00	10.00	
		Dallas Swartz, labor on grounds, 9 days, at $2.00	18.00	
		Ralph Cressler, labor on grounds, 12 days, at $2.00	24.00	
		Dan Doughenbaugh, labor on grounds, 12 days, at $4.00	48.00	
		I. B. Brown, labor on grounds, 11 days, at $4.00	44.00	
		Caleb Johns, labor on grounds, 8 days, 5 hours, at $4.00	34.00	

		Russell Mote, labor on grounds, 2 days, at $2.00	4.00	
		Theo. Broerman, labor on grounds, 1 day, at $1.75	1.75	
		E. A. Peterson, labor on grounds, 1 day, at $2.25	2.25	
				414.30
5- 7	9394	American Trotting Registry Association, one copy, Volume No. 27		5.00
5- 7	9395	Adams Express Co., express bills, January, February, March, April		2.23
5- 7	9396	American Express Co., express bills, November, January, February, March, April		11.55
5- 7	9397	Bureau of Advertising, 650 multigraph letters, 3 forms		5.00
5- 7	9398	Des Moines Admens Club, dues, 1912		10.00
5- 7	9399	Des Moines Water Co., water bills, November, 1911, to April, 1912, inclusive		47.06
5- 7	9400	Des Moines Rubber Stamp Works, rubber stamps		2.95
5- 7	9401	Ferguson Printing Co., miscellaneous printing..		16.75
5- 7	9402	J. E. Graff, second hand cash register and drugs.		30.25
5- 7	9403	S. Joseph & Sons, engraving cups for 1911 fair..		1.56
5- 7	9404	Fred Hahne Printing Co., 10M light enclosures..		12.50
5- 7	9405	U. S. Express Co., express bills, January, February, March		5.30
5- 7	9406	Wells, Fargo & Co., express bills, November, 1911, January, February and March, 1912		6.37
5- 7	9407	Western Union Telegraph Co., messages, December, 1911, to April, 1912, inclusive		14.48
5- 7	9408	D. K. Ziegler, seven salt barrels, (grounds), 1911		.70
5- 7	9409	Commercial Club, reservation, Booster Excursion, May 14-16		35.00
5- 8	9410	Potts Bros., third estimate cement floors, agricultural and machinery halls		600.00
5-10	9411	Des Moines Daily News, subscription, 1-1-12 to 1-1-13		3.65
5-10	9412	Genevieve Kelley, eight days, extra clerk, May..		20.00
5-11	9413	L. H. Kurtz, P. M., postage 2,500 "Greater Iowa".		25.00
5-14	9414	L. H. Kurtz, P. M., postage 2,050 "Greater Iowa".		20.00
5-17	9415	Spirit of the West, advertising speed program..		62.50
5-17	9416	C. E. Cameron, per diem and mileage, executive committee meeting		30.00
5-17	9417	O. A. Olson, per diem and mileage, executive committee meeting		31.50
5-18	9418	Ben J. Ness, sheriff, additional land condemned		3,049.50
5-18	9419	Helena Lynch, 16 days, extra clerk, May		40.00

5-21	9420	A. R. Corey, secretary pay roll No. 14 (grounds): May 5-18 inclusive.	
		Geo. Whitney, foreman, 12 days, at $2.25	$27.00
		Harry Baker, labor on grounds, 8 days, 9 hours, at $3.00	26.70
		T. W. Davis, labor on grounds, 1 day, at $2.50	2.50
		Dan Hoppes, labor on grounds, 8 days, at $2.50	20.00
		D. C. King, labor on grounds, 4 days, at $2.50	10.00
		Arthur Dunkin, labor on grounds, 11 days, 5 hours, at $2.50	28.75
		H. P. Stouffer, labor on grounds, 6 days, at $3.00	18.00
		Wm. Deets, labor on grounds, 8 13-20 days, at $3.00	25.95
		W. Warrington, labor on grounds, 2 days, 5 hours, at $2.00	5.00
		Oscar Johnson, labor on grounds, 6 days, 1 hour, at $2.25	13.72
		E. H. Deemer, labor on grounds, 12 days, at $2.00	24.00
		E. A. Peterson, labor on grounds, 6 days, 6 hours, at $2.25	14.85
		John Olson, labor on grounds, 5 days, at $2.00	10.00
		Alvie Wilson, labor on grounds, 6 3-20 days, at $2.00	12.30
		Wesley Strait, labor on grounds, 7 3-20 days, at $1.00	7.15
		Wm. Lee, labor on grounds, 8 13-20 days, at $2.00	17.30
		Chas. Hiatt, labor on grounds, 8 13-20 days at $2.00	17.30
		John Brown, labor on grounds, 9 3-20 days, at $2.00	18.30
		Theo. Broerman, labor on grounds, 6 days, 5 hours, $1.75	11.37
		Russel Mote, labor on grounds, 7 13-20 days, at $2.00	15.30
		Dallas Swartz, labor on grounds, 9 days, at $2.00	18.00
		E. Doughenbaugh, labor on grounds, 10 13-20 days, at $2.00	21.30
		Ed McKowan, labor on grounds, 10 13-20 days, at $2.00	21.30

		Sam Grylls, labor on grounds, 10 3-20 days, at $2.00	20.30	
		E. E. Murphy, labor on grounds, 4 days, at $2.00	8.00	
		I. J. Whitmer, labor on grounds, 11 days, at $2.00	22.00	
		Chas. Brennan, labor on grounds, 12 days, at $2.00	24.00	
		Henry Grandgeorge, labor on grounds, 11 days, at $2.50	27.50	
		Caleb Johns, labor on grounds, 1 7-10 days, at $4.00	6.80	
		Chas. Morrison, labor on grounds, 12 days, at $3.50	42.00	
		Dan Doughenbaugh, labor on grounds, 10 3-20 days, at $4.00	40.60	
		I. B. Brown, labor on grounds, 9 3-20 days, at $4.00	36.60	
		Ralph Cressler, labor on grounds, 12 days, at $2.00	24.00	
				637.89
5-21	9421	Capital City Construction Co., engineering services agricultural hall floor		37.00
5-27	9422	Louis Kurtz, P. M., postage		40.00
5-28	9423	Inter-State Realty Co., additional land		350.00
5-28	9424	Inter-State Realty Co., additional land		200.00
5-28	9425	Billboard Publishing Co., advertising Chicago attraction meeting		5.00
5-29	9426	Potts Bros., fourth estimate cement floor work, machinery hall		600.00
5-29	9427	Elsie Colton, salary, May, 1912		100.00
5-31	9428	W. C. Brown, privilege work		40.00
6- 1	9429	C. A. Nash, salary, May, 1912		100.00
6- 1	9430	J. H. Deemer, salary, May, 1912		100.00
6- 1	9431	Edith K. Smith, stenographer, May, 1912		75.00
6- 1	9432	Minnie Anderson, extra clerk, May, 1912		65.00
6- 1	9433	Bess Williams, extra clerk, May, 1912		65.00
6- 1	9434	Wilcox Howell Hopkins Co., insurance premiums		105.00
6- 1	9435	C. E. Cameron, per diem and mileage, executive committee meeting		30.00
6- 1	9436	O. A. Olson, per diem and mileage, executive committee meeting		31.50
6- 1	9437	Liebbe, Nourse & Rasmussen, first payment architect fees, new horse barn		200.00
6- 4	9438	A. R. Corey, secretary pay roll No. 15, (grounds): May 19—June 1, inclusive.		
		Harry Baker, labor on grounds, 10 days, 9 hours, at $3.00	$ 32.70	

Geo. Whitney, foreman, 13 days, 7 hours, at $2.25	30.83
Earl Doughenbaugh, labor on grounds, 6 days, at $2.00	12.00
Dan Doughenbaugh, labor on grounds, 11 days, 5 hours, at $4.00	46.00
Bert Bartlett, labor on grounds, 8 3-20 days, at $2.25	18.68
Wm. Koch, labor on grounds, 10 days, at $2.25	22.50
E. H. Deemer, labor on grounds, 11 days, 1 hour, at $2.00	22.20
W. J. Hillis, labor on grounds, 10 days, at $1.75	17.50
W. E. Brown, labor on grounds, 9 17-20 days, at $2.00	19.70
Robt. Johns, labor on grounds, 5 days, at $2.00	10.00
Geo. Jones, labor on grounds, 5 days, at $2.00	10.00
Ralph Cressler, labor on grounds, 12 days, at $2.00	24.00
I. B. Brown, labor on grounds, 10 days, at $4.00	40.00
Chas. Morrison, labor on grounds, 12 days, at $3.50	42.00
Caleb Johns, labor on grounds, 4 days, at $2.00	8.00
Henry Grandgeorge, labor on grounds, 6 days, 5 hours, at $2.50	16.25
P. A. Bucher, labor on grounds, 2 days, 5 hours, at $2.00	5.00
Henry Kurtz, labor on grounds, 1 day, at $2.00	2.00
Chas. Brennan, labor on grounds, 8 days, at $2.00	16.00
I. J. Whitmer, labor on grounds, 11 days, at $2.00	22.00
Sam Grylls, labor on grounds, 10 days, at $2.00	20.00
Ed McKowan, labor on grounds, 9 17-20 days, at $2.00	19.70
Dallas Swartz, labor on grounds, 8 days, at $2.00	16.00
Theo. Broerman, labor on grounds, 10 days, 3 hours, at $1.75	18.03
Emanuel Hughes, labor on grounds, 3 days, at $2.00	6.00

		Jno. Brown, labor on grounds, 10 7-20 days, at $2.00	20.70	
		Chas. Hiatt, labor on grounds, 5 days, at $2.00	10.00	
		Wm. Lee, labor on grounds, 10 17-20 days, at $2.00	21.70	
		Wesley Strait, labor on grounds, 6 days, at $1.00	6.00	
		Alvie Wilson, labor on grounds, 7 days, at $2.00	14.00	
		John Olson, labor on grounds, 8 days, at $2.00	16.00	
		Oscar Johnson, labor on grounds, 9 days, 6 hours, at $2.25	21.60	
		Wm. Deets, labor on grounds, 10 17-20 days, at $3.00	32.55	
		E. A. Peterson, labor on grounds, 9 days, 6 hours, at $2.25	21.60	
		J. W. Sockrider, labor on grounds, 10 days, at $2.00	20.00	
		W. Warrington, labor on grounds, 10 days, at $2.00	20.00	
		T. W. Davis, labor on grounds, 11 days, at $2.50	27.50	
		Dan Hoppes, labor on grounds, 11 days, 5 hours, at $2.50	28.75	
		A. W. Shaw, labor on grounds, 1 day, 9 hours, at $2.00	3.80	
		E. Schmidt, labor on grounds, 2 days, 5 hours, at $2.25	5.63	
		D. C. King, labor on grounds, 5 days, 5 hours, at $2.50	13.75	
		Arthur Dunkin, labor on grounds, 7 15-20 days, at $2.50	19.37	
		H. P. Stouffer, labor on grounds, 7 days, 5 hours, at $3.00	22.50	
				822.54
6- 4	9439	S. H. Johnston, services stallion examination, Cooper, Iowa		15.00
6- 4	9440	C. H. Stange, services stallion examination, Cooper, Iowa		12.00
6- 4	9441	O. A. Olson, expenses aeroplane committee meeting		3.25
6- 4	9442	A. R. Corey, expenses aeroplane committee meeting		4.50
6- 4	9443	Savery Hotel Co., expenses aeroplane committee meeting		6.80
6- 4	9444	C. A. Nash, expenses jobbers excursion		1.50

6- 4	9445	S. K. Noland, auctioneer, services house sale, May 31st		20.00
6- 7	9446	Potts Bros., 2d estimate machinery hall floor		600.00
6-11	9447	Iowa Telephone Co., toll bills, Ames station		.70
6-11	9448	H. M. Kinsell, moving Crawford house, additional land		125.00
6-11	9449	A. Olson, laying 5M shingles, weather and crop office		6.25
6-14	9450	Louis Kurtz, P. M., postage 2M "Greater Iowa"		20.00
6-15	9451	Des Moines Commercial Club, dues, 5-11-11 to 5-11-12		15.00
6-15	9452	Louis Kurtz, P. M., postage 2,600 "Greater Iowa"		26.00
6-17	9453	Louis Kurtz, P. M., postage		60.00
6-17	9454	F. L. Buck, services stallion examination, Cooper, Iowa		11.50
6-17	9455	A. R. Corey, secretary pay roll No. 16, (grounds):		
		June 2-15, inclusive.		
		Harry Baker, labor on grounds, 11 1-20 days, at $3.00	$ 33.15	
		Geo. Whitney, foreman, 14 days, 4 hours, at $2.25	32.40	
		Wm. Koch, labor on grounds, 7 days, at $2.25	15.75	
		Ralph Cressler, labor on grounds, 11 days, 5 hours, at $2.00	23.00	
		Geo. W. Williams, labor on grounds, 5 days, 9½ hours, at $2.00	11.90	
		I. B. Brown, labor on grounds, 11 days, 1½ hours, at $4.00	44.60	
		Chas. Morrison, labor on grounds, 12 days, at $3.50	42.00	
		Caleb Johns, labor on race track, 1 day, 5 hours, at $4.00	6.00	
		Caleb Johns, labor on race track, 1 day, at $2.00	2.00	
		P. A. Boucher, labor on grounds, 11 days, at $2.00	22.00	
		Henry Kurtz, labor on grounds, 11 1-20 days, at $2.00	22.10	
		W. E. Brown, labor on grounds, 10 days, 1½ hours, at $2.00	20.30	
		Chas. Brennan, labor on grounds, 8 days, 9 hours, at $2.00	17.80	
		Henry Grandgeorge, labor on grounds, 8 days, 9½ hours, at $2.50	22.37	
		I. J. Whitmer, labor on grounds, 12 days, at $2.00	24.00	

Sam Grylls, moving barns, 10 days, 1½ hours, at $2.00	20.30
E. McKowan, mowing grass, 10 days, at $2.00	20.00
Theo. Broerman, labor on grounds, 11 days, 5 hours, at $1.75	20.12
Emanuel Hughes, labor on grounds, 11 days, 1 hour, at $2.00	22.20
John Brown, labor on grounds, 8 days, 1½ hours, at $2.00	16.30
Wm. Lee, moving barns, 9 days, 6½ hours, at $2.00	19.30
John Olson, labor on grounds, 7 9-10 days, at $2.00	15.80
Earl Doughenbaugh, moving barns, 10 days, 2 hours, at $2.00	20.40
E. H. Deemer, labor on grounds, 12 days, at $2.00	24.00
Carl P. Anderson, painting, 9½ hours, at $2.00	1.90
J. H. Greenwood, plants and flowers, 2 days, at $1.75	3.50
D. B. Hughes, labor on grounds, 8 8-10 days, at $2.00	17.60
Harry Williams, labor on grounds, 10 3-20 days, at $2.00	20.30
Walter Hunt, labor on grounds, 11 days, at $2.50	27.50
G. E. Buck, labor on grounds, 11 days, at $2.50	27.50
A. W. Wiehn, labor on grounds, 9 17-20 days, at $2.00	19.70
Erwin Deemer, labor on grounds, 6 days, at $1.50	9.00
L. Redington, labor on grounds, 4 7-10 days, at $4.00	18.80
Wm. Waller, labor on grounds, 4 17-20 days, at $2.00	9.70
W. Warrington, labor on grounds, 12 days, at $2.00	24.00
Wm. Deets, labor on grounds, 11 3-20 days, at $3.00	33.45
A. W. Shaw, labor on grounds, 12 days, at $2.00	24.00
D. C. King, labor on grounds, 5 days, 5 hours, at $2.50	13.75
J. W. Sackrider, labor on grounds, 12 days, at $2.00	24.00

		T. W. Davis, labor on grounds, 11 days, 5 hours, at $2.50	28.75	
		Arthur Duncan, labor on grounds, 10 days, 6 hours, at $2.50	26.50	
		Dan Hoppes, labor on grounds, 12 days, at $2.50	30.00	
		H. P. Stouffer, labor on grounds, 11 days, at $3.00	33.00	
		Roy Finley, labor on grounds, 3 days, at $1.75	5.25	
		Don Paul, labor on grounds, 10 days, at $1.75	17.50	
		Leo Paul, labor on grounds, 9 days, at $1.25	11.25	
		Dan Doughenbaugh, labor on grounds, 11 days, 2 hours, at $4.00	44.80	
		Geo. Whitmer, labor on grounds, 5 days, 7 hours. at $1.75	9.98	
		W. J. Hillis, labor on grounds, 11 days, 3 hours, at $1.75	19.78	
				1,019.30
6-20	9456	A. Olson, laying 6¼M shingles, barber shop		7.80
6-21	9457	Potts Bros., 3d estimate machinery hall floor		600.00
6-21	9458	J. F. Summers, expenses attending meeting (Chicago) American Association Fairs and Expositions, 1911		35.70
6-21	9459	J. F. Summers, special committee, work, sheep department		28.00
6-21	9460	C. E. Cameron, per diem and mileage, executive committee meeting		56.00
6-21	9461	R. S. Johnston, per diem and mileage, auditing committee meeting		31.80
6-21	9462	J. F. Summers, special committee work, correcting awards. sheep department		24.00
6-22	9463	H. M. Kinsell, moving Cruikshank house, additional land		75.00
6-22	9464	O. A. Olson, per diem and mileage, executive committee meeting		51.00
6-22	9465	C. F. Curtiss, special committee work to consider special attractions		7.70
6-22	9466	E. J. Curtin, special committee work contracting score card privilege		39.50
6-24	9467	Louis Kurtz, P. M., postage 2,750 premium lists		110.00
6-25	9468	J. V. Lindsey, 59 1-16 bushels oats, feed for mule and horse teams, (grounds)		33.95
6-25	9469	A. P. Vrenderburg, secretary license fee, dog show		40.00
6-25	9470	A. L. Denio, special committee work, speed department		45.46

6-25	9471	E. M. Wentworth, special committee work, laying out camp grounds		18.00
6-27	9472	J. E. Lovejoy, first estimate new horse barn		5,600.00
6-28	9473	W. C. Brown, privilege work		52.00
6-28	9474	Louis Kurtz, P. M., postage		40.00
6-28	9475	American Trotting Association, part payment dues, 1912		24.95
6-28	9476	American Trotting Association, balance payment dues, 1912		75.05
6-28	9477	Louis Kurtz, P. M., postage 2M premium lists		80.00
6-29	9478	C. A. Nash, salary, June, 1912		100.00
6-29	9479	Elsie Colton, salary, June, 1912		100.00
6-29	9480	J. H. Deemer, salary, June, 1912		100.00
6-29	9481	Edith K. Smith, salary, June, 1912		85.00
6-29	9482	Minnie Anderson, extra clerk, June, 1912		65.00
6-29	9483	Bess Williams, extra clerk, June, 1912		65.00
6-29	9484	Clifford Heer, extra clerk, 18 days, June, 1912		45.00
6-29	9485	Buena Reed, extra clerk, 3 days, June, 1912		6.75
6-29	9486	J. H. Deemer, expenses trip, Minnesota state fair grounds, plans for new bleachers		17.20
6-29	9487	A. R. Corey, expenses trip, Minnesota state fair grounds, plans for new bleachers		17.20
7- 1	9488	Chase & West, furnishings, Administration building		16.90
7- 1	9489	Potts Bros., fourth estimate machinery hall floor.		500.00
7- 1	9490	Hal Edwards, horseshoeing & repairs, (grounds)		6.40
7- 1	9491	U. S. Mote, mower repairs, (grounds)		4.00
7- 2	9492	A. R. Corey, secretary pay roll No. 17 (grounds):		
		June 16-29, inclusive.		
		Geo. Whitney, foreman, 13 days, 6 hours, at $2.25	$ 30.60	
		Harry Baker, labor on grounds, 10 days, 8 hours, at $3.00	32.40	
		H. P. Stouffer, labor on grounds, 12 days, at $3.00	36.00	
		Dan Hoppes, labor on grounds, 12 days, at $2.50	30.00	
		Arthur Duncan, labor on grounds, 6 days, at $2.50	15.00	
		T. W. Davis, labor on grounds, 12 days, at $2.50	30.00	
		J. W. Sackrider, labor on grounds, 12 days, at $2.00	24.00	
		D. C. King, labor on grounds, 6 days, at $2.50	15.00	
		Chas. Beese, labor on grounds, 5 days, at $2.00	10.00	

Roy Finley, labor on grounds, 11 days, 9 hours, at $2.00	23.80
A. W. Shaw, labor on grounds, 12 days, at $2.00	24.00
A. W. Deets, labor on grounds, 12 days, at $3.00	36.00
W. Warrington, labor on grounds, 12 days, at $2.00	24.00
Leo Paul, labor on grounds, 12 days, at $1.25	15.00
Don Paul, labor on grounds, 12 days, at $2.00	24.00
Wm. Waller, labor on grounds, 12 days, at $2.00	24.00
F. Redington, labor on grounds, 7 days, at $4.00	28.00
Erwin Deemer, labor on grounds, 12 days, at $1.50	18.00
A. W. Wiehn, labor on grounds, 12 days, at $2.00	24.00
G. E. Buck, labor on grounds, 9 days, 1 hour, at $2.50	22.75
Walter Hunt, labor on grounds, 12 days, at $3.00	36.00
Harry Williams, labor on grounds, 12 days, at $2.00	24.00
D. B. Hughes, labor on grounds, 11 days, 6 hours, at $2.00	23.20
E. H. Deemer, labor on grounds, 11 days, 5 hours, at $2.00	23.00
Earl Doughenbaugh, labor on grounds, 12 days, at $2.00	24.00
Jno. Olson, labor on grounds, 12 days, at $2.00	24.00
Wm. Lee, labor on grounds, 1 day, at $2.00	2.00
Emanuel Hughes, labor on grounds, 11 days, 1 hour, at $2.00	22.20
Sam Grylls, labor on grounds, 11 days, 2 hours, at $2.00	22.40
Geo. Whitmer, labor on grounds, 11 days, 6 hours, at $1.75	20.30
I. J. Whitmer, labor on grounds, 12 days, 5 hours. at $2.00	25.00
Henry Grandgeorge, labor on grounds, 9 days, 9 hours, at $2.50	24.75
Chas. Brennan, labor on grounds, 12 days, at $2.00	24.00

		W. E. Brown, labor on ground, 1 day, at $2.00	2.00	
		W. J. Hillis, labor on grounds, 11 days, 6 hours, at $1.75	20.30	
		Henry Kurtz, labor on grounds, 11 19-20 days, at $2.00	23.90	
		P. A. Boucher, labor on grounds, 12 days, at $2.00	24.00	
		Caleb Johns, labor on grounds, 2 days, at $4.00	8.00	
		Chas. Morrison, labor on grounds, 13 days, 3 hours, at $3.50	46.55	
		Dan Doughenbaugh, labor on grounds, 12½ days, at $4.00	50.00	
		I. B. Brown, labor on grounds, 13 days, at $4.00	52.00	
		Ralph Cressler, labor on grounds, 11 days, at $2.00	22.00	
		Geo. W. Williams, labor on grounds, 11 days, 6 hours, at $2.00	23.20	
		Dallas Swartz, labor on grounds, 8 days, at $2.00	16.00	
		Lawrence Boutin, labor on grounds, 5 days, 9 hours, at $2.00	11.80	
		Frank Maricle, labor on grounds, 3 days, at $2.00	6.00	
		Theo. Broerman, labor on grounds, 11 7-20 days, at $1.75	19.85	
		Albert Spevack, labor on grounds, 11 days, at $2.00	22.00	
		Ed. McKowan, labor on grounds, 11 days, 5 hours, at $2.00	23.00	
		M. Burnett, labor on grounds, 5 days, at $2.00	10.00	
				1,162.00
7- 2	9493	A. Olson, laying 20,000 shingles new speed barn.		25.00
7- 2	9494	A. P. Vrendenburgh, secretary, dog show license fee		10.00
7- 3	9495	J. L. Barr, refund on barn, house sale May 31, 1912		17.00
7- 3	9496	Geo. A. Miller Printing Co., record book		6.50
7- 3	9497	Louis Kurtz, P. M., postage 2,900 premium lists		116.00
7- 3	9498	Jas. F. Fredregill, brick work, Crawford house and speed barn		75.00
7- 3	9499	Tablet & Ticket Co., 10M gummed labels		25.10
7- 6	9500	C., B. & Q. Ry. Co., freight, 1 barrel paint		2.32
7- 8	9501	Mary E. Price, stenographic work, school exhibits department		1.63

7- 8	9502	C. N. McIlvaine, secretary pro rata share, advertising speed program, Iowa, Nebraska and South Dakota circuit		62.31
7- 8	9503	C. E. Cameron, per diem and mileage, executive committee meeting		22.00
7- 9	9504	W. C. Brown, privilege work		16.00
7- 9	9505	C., B. & Q. R. R. Co., freight school exhibits		.25
7- 9	9506	C. S. Cooter, first payment on lot for moving Cruikshank house, additional land		10.00
7- 9	9507	C. S. Cooter, final payment, on lot for moving Cruikshank house, additional land		190.00
7- 9	9508	Liebbe, Nourse & Rasmussen, second payment architect fees horse barn		200.00
7-10	9509	Louis Kurtz, P. M., postage 2,100 premium lists		84.00
7-12	9510	Louis Kurtz, P. M., postage		60.00
7-12	9511	East Des Moines Commercial League, dues, 1912		5.00
7-12	9512	Louis Kurtz, P. M., postage 2M "Greater Iowa".		20.00
7-13	9513	Potts Bros., fifth estimate, machinery hall floor		900.00
7-13	9514	Alex, Cruikshank, additional land		50.00
7-13	9515	W. R. Quinnett, brick work, Cruikshank house and horse barns		40.00
7-13	9516	W. R. Quinett, brick work, Cruikshank house and horse barns		53.00
7-13	9517	Louis Kurtz, P. M., postage 2,600 "Greater Iowa"		26.00
7-13	9518	Jno. Hamilton, Secy. American Association Institute Workers dues 1911		5.00
7-13	9519	Kaufman & Strauss, advertising specialties, masks		19.94
7-13	9520	Ft. Madison Democrat, county advertising 1911 fair		6.60
7-15	9521	R. L. Polk & Co., 1912 Iowa Gazeteer		7.00
7-17	9522	A. R. Corey, Secy., pay roll No. 18 (grounds): June 30 to July 13, inclusive.		
		Carl Heggen, labor on grounds, 10 days, at $3.00	$ 30.00	
		Geo. Whitney, foreman, 13 days, 1 hour, at $2.25	29.47	
		Walter Hunt, floral tables, agricultural building, 12 days, at $3.00	36.00	
		H. P. Stouffer, moving horse barns, 11 days, at $3.00	33.00	
		Dan Hoppes, moving horse barns, 8 days, at $2.50	20.00	
		T. W. Davis, moving horse barns, 11 days at $2.50	27.50	
		D. C. King, moving horse barns, 4 days, 5 hours, at $2.50	11.25	
		A. W. Shaw, moving horse barns and work on bleachers, 11 days, at $2.00	22.00	

G. E. Buck, moving horse barns and work on bleachers, 10 days, at $2.50	25.00
Albert Spevack, moving horse barns, 11 days, at $2.00	22.00
D. F. Newell, moving horse barns, 5 days, at $2.00	10.00
J. W. Sackrider, moving horse barns, 8 days, at $2.00	16.00
P. A. Boucher, moving horse barns, 9 days, at $2.00	18.00
Frank Maricle, moving horse barns, 11 days, at $2.00	22.00
M. Burnett, moving horse barns, 11 days, at $2.00	22.00
Geo. W. Williams, moving horse barns, 7 days, at $2.00	14.00
W. H. Kelly, moving horse barns, 5-10 day, at $2.00	1.00
Leo Paul, water boy, 11 days, at $1.25	13.75
W. Warrington, labor on grounds, 10 days, 5 hours, at $2.00	21.00
Roy Finley, painting, 10 days, 9 hours, at $2.00	21.80
Don Paul, painting, 12 days, at $2.00	24.00
Erwin Deemer, painting, 11 days, at $1.50	16.50
Hoyt Woodward, painting and work on swine pavilion, 3 days, at $1.75	5.25
Chas. Beese, painting, 5 days, at $2.00	10.00
Lawrence Boutin, painting and work on camp grounds, 11 days, at $2.00	22.00
E. H. Deemer, painting, 11 days, at $2.00	22.00
Parker Douglas, work on water system, 7 days, at $2.00	14.00
Henry Grandgeorge, work on water system and grading, 10 days, 7 hours, at $2.50	26.88
D. B. Hughes, labor on grounds, 11 days, at $2.00	22.00
Emanuel Hughes, labor on grounds, 11 days, at $2.00	22.00
John Olson, labor on grounds, 11 days, at $2.00	22.00
Geo. Whitmer, labor on grounds, 11 days, 5 hours, at $1.75	20.12
I. J. Whitmer, labor on grounds, 11 days, 5 hours, at $2.00	23.00

		Ed McKowan, mowing grass, 10 days, 3 hours, at $2.00..................	20.70	
		S. F. Wilson, water system and drainage, 5 days, 5 hours, at $2.00........	11.00	
		Dallas Swartz, water system and drainage, 10 days, 7 hours, at $2.00......	21.40	
		Henry Kurtz, labor on grounds, 10 days, 5 hours, at $2.00..............	21.00	
		Theo Broerman, mowing grass and plants and flowers, 10 days, at $1.75.	17.50	
		W. J. Hillis. labor on grounds, 11 days, at $1.75	19.25	
		A. W. Deets, labor on grounds, 11 days, at $3.00	33.00	
		Sam Grylls, labor on grounds, 11 days, at $2.00	22.00	
		Chas. Brennan, labor on grounds, 11 days, at $2.00	22.00	
		Wm. Waller, labor on grounds, 11 days, at $2.00	22.00	
		A. W. Wiehn, water system and drainage, 10 days, 5 hours, at $2.00......	21.00	
		Harry Williams, labor on grounds, 2 days, at $2.00	4.00	
		Earl Doughenbaugh, labor on grounds, 10 days, at $2.00	20.00	
		Ralph L. Cressler, labor on grounds, 11 days, at $2.00	22.00	
		I. B. Brown, labor on grounds, 11 days, at $4.00	44.00	
		I. B. Brown, labor on grounds, 5 days, at $4.00	20.00	
		Dan Doughenbaugh, labor on grounds, 11 days, at $4.00..................	44.00	
		Caleb Johns, work on race track, 4 days at $2.00	8.00	
		Chas. Morrison, work on race track, and hauling manure, 9 days, at $3.50	31.50	
				1,089.87
7-17	9523	E. M. Reeves, per diem and mileage special committee work, box apple exhibit................		24.30
7-17	9524	T. C. Legoe, per diem and mileage, auditing committee meeting		20.50
7-17	9525	C. & N. W. Ry., Frt., sprinkler attachments......		3.60
7-17	9526	Walter Evans, whitewashing 12 cattle barns.....		150.00
7-18	9527	A. Olson, shingling speed barn No. 1 and repair work		46.25

7-20	9528	Jas. Fredregill, mason work, agricultural hall and swine pavilion		49.50
7-20	9529	Jas. C. Fredregill, mason work, agricultural hall and swine pavilion		24.50
7-22	9530	Louis Kurtz, P. M., postage		60.00
7-23	9531	Joseph Sletton, extra clerk 12 days, July		15.00
7-24	9532	C. E. Cameron, per diem and mileage, executive committee meeting		26.00
7-24	9533	O. A. Olson, per diem and mileage, executive committee meeting		55.00
7-24	9534	F. E. Sheldon, special committee work, grain decorations, agricultural hall		24.30
7-27	9535	Alex. Cruikshank, additional land		50.00
7-29	9536	Potts Bros., 6th estimate machinery hall floor		600.00
7-29	9537	A. R. Corey, Secy., pay roll No. 19, (grounds): July 14-27, inclusive.		
		H. P. Stouffer, work on bleachers and booths in agricultural building, 12 days, at $3.00	$ 36.00	
		Dan Hoppes, labor on grounds, 11 1-2 days, at $2.50	28.75	
		Walter Hunt, work on booths and tables in agricultural building, 12 days, at $3.00	36.00	
		T. W. Davis, labor on grounds, 11 days, days, at $2.50	27.50	
		D. C. King, work on bleachers, ½ day, at $2.50	1.25	
		G. E. Buck, work on bleachers and booths in agricultural building, 12 days, at $2.50	30.00	
		Arthur Duncan, work on bleachers and booths in agricultural building, 11 days, at $2.50	27.50	
		A. W. Shaw, labor on grounds, 11 days, at $2.00	22.00	
		Albert Spevack, labor on grounds, 12 days, at $2.00	24.00	
		D. F. Newell, labor on grounds, 10 days, at $2.00	20.00	
		J. W. Sackrider, labor on grounds, 11 days, at $2.00	22.00	
		P. A. Boucher, labor on grounds, 11 days, 5 hours, at $2.00	23.00	
		Frank Maricle, labor on grounds, 10 7-20 days, at $2.00	21.70	
		M. Burnett, work on bleachers, 11 8-10 days, at $2.00	23.60	

Geo. W. Williams, labor on grounds, 12 days at $2.00	24.00
W. Gartsee, labor on bleachers, 5 days, at $2.50	12.50
T. C. Campbell, work on bleachers, 6 days, at $2.00	12.00
Dave Johnson, work on bleachers, 6 days, at $2.00	12.00
Henry Stevens, work on bleachers, 6 days, at $4.50	27.00
J. O. Fredregill, work on bleachers and speed barns, 6 days, 5 hours, at $2.00	13.00
C. M. Dawson, labor on grounds, 6½ days, at $2.00	13.00
Dick Grylls, work on bleachers, 6 days, at $2.00	12.00
Jake Berger, work on bleachers, 6 days, at $2.50	15.00
R. E. O'Brien, work on light system, 10 days, at $3.50	35.00
A. Ballard, work on light system, 11 days at $3.50	38.50
F. Fuller, work on light system, 5 days, at $3.50	17.50
Geo. Whitney, foreman, 13 days, 6 hours, at $2.25	30.61
Ray Barnes, water boy, 5 days, at $1.50	5.00
Leo Paul, water boy, 12 days, at $1.25	15.00
W. Warrington, painting, 12 days, at $2.00	24.00
Ray Finley, painting, 11 days, 9 hours, at $2.00	23.80
Dan Paul, painting, 12 days, at $2.00	24.00
Erwin Deemer, labor on grounds, 12 days, at $1.50	18.00
Hoyt Woodward, labor on grounds, 12 days, at $1.75	21.00
Noble Stutsman, work on bleachers, 2 days, at $2.50	5.00
F. A. Wigton, painting, 5 days at $2.00	10.00
Frank Keats, painting, 2 days, at $1.75	3.50
Henry Willets, painting, 1 day, 3 hours, at $2.00	2.60
Hal Bates, painting, 1 day, 7 hours, at $2.00	3.40
Lawrence Boutin, painting, 12 days, at $2.00	24.00

E. H. Deemer, painting, 12 days at $2.00	24.00
Parker Douglas, work on bleachers and water system, 11 days at $2.00......	22.00
Henry Grandgeorge, labor on grounds, 12 days, at $2.50....................	30.00
D. B. Hughes, labor on grounds, 12 days, at $2.00	24.00
Emanuel Hughes, labor on grounds, 11 days, at $2.00.....................	22.00
Geo. Whitmer, work on light system, 12 days, at $1.75	21.00
Ray Miller, work on walks, 3 days, at $2.00	6.00
Rudolph Lvoboda, work on walks and drainage, 3 days, at $2.00...........	6.00
C. Shockley, work on walks and filling horse barn, 6 days, at $2.00..........	12.00
Jno. Olson, labor on grounds, 11 days, at $2.00	22.00
I. J. Whitmer, labor on grounds, 12 days, at $2.00	24.00
Ed McKowan, work on grounds, 12 days, at $2.00	24.00
S. T. Wilson, drainage, horse barns, 1 day, at $2.00	2.00
Dallas Swartz, work on walks and drainage, 11 days, at $2.00..........	22.00
Henry Kurtz, labor on grounds, 10 days, 7 hours, at $2.00	21.40
Theo. Broerman, cleaning buildings and plants and flowers, 9 days, 5 hours, at $1.75	16.62
A. W. Deets, labor on grounds, 12 days, at $3.00	36.00
W. J. Hillis, cleaning buildings and mowing grass, 12 days, at $1.75......	21.00
Harry Williams, labor on grounds, 12 days, at $2.00	24.00
Sam Grylls, labor on grounds, 7 days, at $2.00	14.00
Chas. Brennan, labor on grounds, 12 days, at $2.00	24.00
A. W. Wiehn, labor on grounds, 12 days, at $2.00	24.00
Wm. Waller, labor on grounds, 7½ days, at $2.00	15.00
Earl Doughenbaugh, labor on grounds, 3 days, 8 hours, at $2.00............	7.60

		I. B. Brown, labor on grounds, 11 3-10 days, at $4.00	42.20	
		I. B. Brown, labor on grounds, 9 3-10 days, at $4.00	37.20	
		Dan Doughenbaugh, labor on grounds, 12 3-10 days, at $4.00	49.20	
		Chas. Morrison, work on race track, 11 days, at $3.50	38.50	
		Carl Heggen, work on bleachers, 11 days, 6 hours, at $3.00	34.80	
		Ed Stevens, work on horse barns, 1 day, at $2.00	2.00	
		Isaac Stewart, labor on grounds, 9 days, 4 hours, at $4.00	37.60	
		H. Stevens, work on bleachers, 2 days, 5 hours, at $2.00	5.00	
		Homer McCoy, labor on race track and walks, 1 day, 3 hours, at $4.00	5.20	
		Homer McCoy, mowing grass, 4 days, at $4.00	16.00	
		Joe Moyer, filling horse barns, 1 day, at $4.00	4.00	
		Joe Moyer, labor on walks, 1 day, at $4.00	4.00	
		Ben Miller, labor on grounds, 5 4-9 days, at $2.25	12.25	
				1,540.28
7-30	9538	Louis Kurtz, P. M., postage		100.00
7-31	9539	C. A. Nash, salary, July		100.00
7-31	9540	Elsie Colton, salary, July		100.00
7-31	9541	J. H. Deemer, salary, July		100.00
7-31	9542	Edith K. Smith, additional salary, July		10.00
7-31	9543	Minnie Anderson, extra clerk, July		65.00
7-31	9544	Bess Williams, extra clerk, July		65.00
7-31	9545	Clifford Heer, extra clerk, July		65.00
7-31	9546	Geo. K. Scott, extra clerk, 9 days, July		22.50
7-31	9547	Hubert Tiernan, office boy, 8 days, July		8.00
7-31	9548	Buena Reed, extra clerk, 23 days, July		51.75
8- 1	9549	J. R. McHenry, plastering Crawford House, additional land		13.60
8- 3	9550	E. C. Faugh, whitewash contract, cattle barns		51.25
8- 3	9551	A. Olson, shingling speed barn No. 10		34.69
8- 3	9552	J. E. Lovejoy, payment on second estimate, horse barn		3,000.00
8- 3	9553	C. E. Cameron, per diem and mileage, executive committee meeting		46.00
8- 3	9554	Louis Kurtz, P. M., postage 2,300 "Greater Iowa"		23.00
8- 5	9555	C., M. & St. P. R. R., freight, turnstile and ticket chopper		1.67

8- 5	9556	E. M. Wentworth, per diem and mileage, special committee work making appointments police department		18.00
8- 5	9557	C. F. Curtiss, telegraph messages Fargo, N. D.		3.45
8- 5	9558	H. F. Deets, painting contract dining hall roof		35.00
8- 5	9559	Louis Kurtz, P. M., postage 2,450 "Greater Iowa"		24.50
8- 8	9560	A. B. Carter, advertising Dallas county		15.00
8- 8	9561	Wm. P. Dermer, advertising Webster county		25.00
8- 8	9562	R. W. Lamson, advertising Jefferson county		20.00
8- 8	9563	R. L. Allen, advertising Wright county		14.00
8- 8	9564	Spratts Patent Ltd., part payment rent dog benching for dog show		100.00
8- 8	9565	Chas. Weitz' Sons, repairs exposition building		106.00
8- 8	9566	Geo. A. Poff, advertising Keokuk county		20.00
8- 9	9567	Alf Murrow, 33 tons straw, forage department		181.50
8-10	9568	J. E. Lovejoy, 2d payment 2d estimate horse barn		2,500.00
8-10	9569	Louis Kurtz, P. M., postage		100.00
8-10	9570	C., R. I. & P. Ry. Co., freight tan bark for live stock pavilion		65.75
8-10	9571	Walter Hunt, door handles, agricultural hall		9.55
8-12	9572	A. R. Corey, Secy., pay roll No. 20 (grounds): July 28-August 10th, inclusive.		
		D. C. King, booths and tables in agricultural building, 6 days, at $2.50	$ 15.00	
		T. W. Davis, labor on grounds, 14 days, at $2.50	35.00	
		Dan Hoppes, work on bleachers and grounds, 13½ days, at $2.50	33.75	
		G. W. Scott, booths and tables in agricultural building, 12 days, at $2.50	30.00	
		Dave Dickey, labor on grounds, 5 days, at $2.50	12.50	
		Clarence Hall, work on horse barns, 4 days, at $2.00	8.00	
		Henry Stan, labor on grounds, 4½ days, at $2.00	9.00	
		F. L. Clanton, labor on grounds, 5½ days, at $2.00	11.00	
		Wesley Lammey, work on bleachers, 1½ days, at $3.00	4.50	
		James Batten, labor on account of dog show and on ticket booths, 9 days, at $2.00	18.00	
		E. A. Shaw, labor on account of dog show and on ticket booths, 10 days, at $2.50	25.00	
		Noble Stutsman, labor on account of dog show and on bleachers, 12 days, at $2.50	30.00	

Jake Berger, labor on grounds, 13 days, 7½ hours, at $2.50	34.38
Henry Stevens, work on bleachers, 5 days, 7½ hours, at $4.50	25.92
Carl Stevens, labor on bleachers, 5 days, 7½ hours, at $2.00	11.50
G. O. Lewis, labor on bleachers, horse and cattle barns, 9 days, 9 hours, at $2.00	19.80
M. P. Hester, labor on bleachers, horse barns and dog show, 9 days, 9 hours, at $2.00	19.80
Sam Chamberlain, labor on bleachers and on booths agricultural building, 11½ days, at $2.00	23.00
W. Mayo, labor on bleachers and fence, 11½ days, at $2.00	23.00
Earl Redington, labor on bleachers and horse barns, 12½ days, at $2.00	25.00
Dave Johnson, labor on bleachers and horse barns, 8½ days, at $2.00	17.00
T. C. Campbell, labor on bleachers and dog show, 12 days, at $2.00	24.00
Wm. Gartsee, labor on bleachers and ticket booths, 9 days, 3 hours, at $2.50	23.25
Geo. W. Williams, labor on bleachers and horse barns, 11 days, 9 hours, at $2.00	23.80
M. Burnett, labor on grounds, 14 days, at $2.00	28.00
Frank Maricle, labor on bleachers and administration addition, 14 days, at $2.00	28.00
P. A. Boucher, labor on bleachers, 8½ days, at $2.00	17.00
J. W. Sackrider, labor on bleachers, cattle barns and fence, 11 days, at $2.00	22.00
Albert Spevack, labor on grounds, 14 days, at $2.00	28.00
A. W. Shaw, labor on bleachers, 14 days, at $2.00	28.00
Arthur Duncan, labor on bleachers and booths in agricultural building, 13 days, at $2.50	32.50
G. E. Buck, labor on bleachers and shower baths, swine pavilion, 14 days, at $2.50	35.00

Walter Hunt, work on booths, agricultural building and administration building, 12 days, at $3.00	36.00
H. P. Stouffer, labor on bleachers, horse barns and dog show, 14 days, at $3.00	42.00
Geo. Whitmer, work on light system, 12 days, at $1.75	21.00
R. E. O'Brien, work on light system, 6 days, at $3.50	21.00
C. C. Richards, work on light system, 12 days, at $3.50	42.00
Ted Woodward, work on light system, 12 days, at $1.75	21.00
D. L. Sewell, work on light system, 7 days, at $3.50	24.50
H. Gill, cleaning buildings, 3 days, 9 hours, at $2.00	7.80
Perry Diggs, cleaning buildings, 4 days, at $2.00	8.00
W. J. Hillis, mowing grass and cleaning buildings, 13 days, at $1.75	22.75
Theo. Broerman, plants and flowers, and buildings, 11½ days, at $1.75	20.13
Dan Faircloth, work on water system, 7 days, at $2.25	15.75
Parker Douglas, work on water system, 11 days, 8 hours, at $2.00	23.60
Erwin Deemer, office boy and work in agricultural building, 11 days, at $1.50	16.50
Leo Paul, water boy, 14 days, at $1.25	17.50
Ray Barnes, water boy, 12½ days, at $1.50	12.50
Lawrence Boutin, work on bleachers, 3 days, 9 hours, at $2.00	7.80
F. A. Wigton, painting, 10 days, at $2.00	20.00
Elmo Waldorf, painting, 1 2-10 days, at $3.00	3.60
H. P. Waldorf, painting, 1 day, at $3.00	3.00
J. D. Waldorf, painting, 1 day, 2 hours, at $4.50	5.40
Don Paul, painting, 14 days, at $2.00	28.00
Roy Finley, painting, 13 days, at $2.00	26.00
W. Warrington, painting, 14 days, at $2.00	28.00

J. H. Bailey, painting, 2 days, at $2.25.	4.50
E. H. Deemer, painting, 6 days, at $2.00	12.00
Chas. Brennan, labor on grounds, 13 days, at $2.00	26.00
Harry Williams, labor on grounds, 11½ days, at $2.00	23.00
Geo. Whitney, foreman, 14 days, 8 hours, at $2.25	33.30
Lew Kurtz, labor on grounds, 2 days, at $2.00	4.00
Geo. Schmidt, cleaning buildings, 3 days, at $2.00	6.00
J. H. Hux, work on walks and filling horse barn, 3 days, 4 hours, at $2.00	6.80
Grant Simpson, work on walks and filling horse barn, 5 days, at $2.00.....	10.00
Andrew Keyes, labor on grounds, 6 days, at $2.00	12.00
Harvey Welton, work on streets and filling horse barn, 5 days, at $2.00..	10.00
Leonard Olson, labor on grounds, 5 days, at $1.75	8.75
Henry Kurtz, labor on grounds, 11½ days, at $2.00	23.00
Dallas Swartz, labor on grounds, 14 days, at $2.00	28.00
Ed McKowan, labor on grounds, 13 days, at $2.00	26.00
I. J. Whitmer, work on streets and filling horse barn, 12½ days, at $2.25	25.00
Jno. Olson, labor on grounds, 13 days, at $2.00	26.00
C. Shockley, work on walks and fence, 5 days, at $2.00	10.00
Wm. Hearshman, work on walks and streets, 8½ days, at $2.50	21.25
Ray Miller, work on water system, 1 day, at $2.00	2.00
Gus Kurtz, filling horse barn and work on fence, 8½ days, at $2.00.........	17.00
Earl Doughenbaugh, work on streets and grading, 6½ days, at $2.00	13.00
S. T. Wilson, labor on grounds, 10 days, at $2.00	20.00
Chas. Newell, labor on grounds, 10½ days, at $2.00	21.00
Henry Grandgeorge, labor on walks and baths in swine pavilion, 14 days, at $2.50	35.00

		D. B. Hughes, labor on grounds, 13 days, at $2.00	26.00	
		Emanuel Hughes, labor on grounds, 12 days, at $2.00	24.00	
		A. W. Wiehn, labor on streets and bleachers, 13 days, at $2.00	26.00	
		Elmer Facey, labor on walks and streets, 8½ days, at $2.00	17.00	
		Hoyt Woodward, labor on grounds, 13 days, at $1.75	22.75	
		A. W. Deets, labor on grounds, 14 days, at $3.00	42.00	
		Wm. Waller, labor on grounds, 8 days, at $2.00	16.00	
		C. M. Dawson, labor on grounds, 14 days, at $2.00	28.00	
		J. O. Fredregill, labor on grounds, 14 days, at $2.00	28.00	
		I. B. Brown, labor on grounds, 10 days, 5½ hours, at $4.00	42.20	
		Dan Doughenbaugh, labor on grounds, 12½ days, at $4.00	50.00	
		Chas. Morrison, labor on grounds, 10 days, at $3.50	35.00	
		Carl Heggen, labor on grounds, 13 days, 6 hours, at $3.00	40.80	
		Isaac Stewart, labor on grounds, 12 days, 3 hours, at $4.00	49.20	
		Joe Moyer, labor on grounds, 11 days, 4 hours, at $4.00	47.20	
		Joy Moyer, labor on grounds, 12 days, 3 hours, at $4.00	49.20	
		Homer McCoy, labor on grounds, 12 days, at $4.00	48.00	
		Homer McCoy, labor on grounds, 12 days, 3 hours, at $4.00	49.20	
		A. C. Edwards, labor on race track, 1 day, at $4.00	4.00	
		Wm. Hearshman, labor on grounds, 8 days, 3 hours, at $4.00	33.20	
		D. O. McAlister, labor on light system, 12 days, at $3.85	46.20	
				2,342.08
8-12	9573	Lawrence Peters, 21 tons, 930 pounds, straw, forage department		118.06
8-13	9574	C. W. Phillips, per diem and mileage, auditing committee meeting		33.00
8-13	9575	Des Moines Bridge & Iron Co., repairs machinery hall		425.44

8-13	9576	J. P. Mullen, per diem and mileage, assigning space, machinery department		57.40
8-13	9577	R. S. Johnston, per diem and mileage, assigning pens, swine department		27.80
8-13	9578	J. F. Summers, per diem and mileage, assigning pens, sheep department		28.00
8-13	9579	H. L. Pike, per diem and mileage, assigning stalls, cattle department		32.00
8-13	9580	C. F. Curtiss, per diem and mileage, assigning stalls, horse department		15.40
8-13	9581	O. A. Olson, per diem and mileage, executive committee meetings		55.00
8-14	9582	C., B. & Q. Ry. Co., freight, 2 road carts, speed department		3.20
8-14	9583	C. Staley, painting amphitheatre cornice		40.00
8-14	9584	W. R. Quinnett, mason and cement work, dining hall, administration building		94.00
8-14	9585	M. L. Gratton, refund horse stall rent		4.00
8-14	9586	C. & N. W. Ry., freight, carload hay racks, new horse barn		40.91
8-15	9587	W. M. Peters, 101 bushels, 45 pounds corn, forage department		75.16
8-15	9588	Des Moines Daily News, advertising 1912 fair		84.00
8-16	9589	A. W. R. Boller, advertising Story county		20.00
8-16	9590	C., M. & St. P. Ry., freight, school exhibits		1.47
8-16	9591	A. Olson, laying 14¾M shingles, hospital		18.44
8-16	9592	Potts Bros., estimate machinery hall floor		600.00
8-17	9593	L. H. Kurtz, P. M., postage 4,750 Greater Iowa		47.50
8-19	9594	E. C. Faugh, whitewashing walls, 6 speed barns and dining hall		61.00
8-19	9595	John Cree, 55 tons, 1,580 pounds straw, forage department		284.81
8-19	9596	W. R. Quinnett, mason work, horse barn		17.00
8-22	9597	Geo. B. Brown, 17 days services, concession department		42.50
8-22	9598	J. E. Lovejoy, balance, 2d estimate, horse barn.		5,500.00
8-24	9599	Louis Kurtz, P. M., postage		10.00
8-26	9600	Pain Fireworks Display Co., first payment 1912 fireworks contract		500.00
8-26	9601	E. N. Wentworth, expense, boys judging contest		47.00
8-26	9602	L. B. Gray, 6 tons, 1,910 pounds hay, forage department		83.46
8-26	9603	J. W. Clark, 4 tons, 1,045 pounds hay, forage department		54.27
8-27	9604	A. Liberati, first payment 1912 band contract		1,000.00
8-27	9605	A. R. Corey, Secy., pay roll No. 21 (grounds). August 11-24, inclusive.		
		W. C. Redhead, labor on streets and horse show ring, 6 7-20 days, at $4.00	$ 25.40	

G. H. Koontz, work on light system, 4 7-9 days, at $3.50	16.78
Ernest Neeley, work on light system, 4 1-9 days, at $3.50	14.43
R. E. McLaughlin, work on light system, 3 2-9 days, at $3.50	11.50
H. M. Brush, work on light system, 3 4-9 days, at $3.50	11.89
Jno. W. Post, work on horse barn fill, 3½ days, at $2.00	7.00
Thos. Bennett, labor on grounds, 9 days, at $2.00	18.00
Joe Dawson, labor on grounds, 9 days, 8 hours, at $2.00	19.60
Chas. Newell, labor on grounds, 15 days, at $2.00	30.00
A. W. Weihn, labor on grounds, 15 days, at $2.00	30.00
Earl Doughenbaugh, labor on grounds, 14½ days, at $2.00	29.00
Wm. Hearshman, labor on grounds, 7 days, at $2.50	17.50
I. J. Whitmer, labor on grounds, 14½ days, at $2.00	29.00
F. A. Harrison, labor on grounds, 4 days, at $2.00	8.00
Ed McKowan, labor on grounds, 12½ days, at $2.00	25.00
Henry Kurtz, labor on grounds, 13 19-20 days at $2.00	27.90
Grant Simpson, labor on grounds, 14 11-20 days, at $2.00	29.10
J. H. Hux, labor on grounds, 8 7-10 days, at $2.00	17.40
Chas. Brennan, labor on grounds, 15 days, 1 hour, at $2.00	30.20
Roy Barnes, water boy, 13 days, at $1.00	13.00
Parker Douglas, work on water system, 13 days, 6 hours, at $2.00	27.20
Harvey Welton, labor on grounds, 15 days, 2 hours, at $2.00	30.40
Wm. Waller, labor on grounds, 14 days, at $2.00	28.00
Don Widener, labor on grounds, 5 days, 8 hours, at $2.00	11.60
C. M. Dawson, labor on grounds, 14½ days, at $2.00	29.00
A. W. Deets, labor on grounds, 15 days, 3 hours, at $3.00	45.90

Emanuel Hughes, labor on grounds, 12 days, 9 hours, at $2.00	25.80
Leo Paul, water boy, 14 days, at $1.25.	17.50
Theo. Broerman, cleaning buildings, 12 days, at $1.75	21.00
John Wright, cleaning buildings, 11 days, at $2.00	22.00
Don Faircloth, work on water system, 12 days, 4 hours, at $2.25	27.90
W. R. Wilkins, cleaning buildings, 3 days, at $2.00	6.00
Leonard Olson, work on walks and horse barn fill, 9 days, at $1.75....	15.75
Dallas Swartz, labor on grounds, 13 days, at $2.00	26.00
Jno. Olson, labor on grounds, 12 days, at $2.00	24.00
D. B. Hughes, labor on grounds, 14 days, 6 hours, at $2.00	29.20
E. A. Snow, labor on grounds, 12½ days, at $3.00	37.50
Geo. Whitney, foreman, 14 days, at $3.75	52.50
James Schyler, water boy, 11 days, at $1.00	11.00
Henry Deets, labor on grounds, 5 days, at $3.00	15.00
Geo. Whitmer, labor on light system, 16 3-20 days, at $1.75	28.00
Ted Woodard, labor on light system, 14 days, 3 hours, at $1.75	25.02
R. Illgan, labor on grounds, 5½ days, at $2.00	11.00
J. O. Fredregill, labor on grounds, 14½ days, at $2.00	29.00
Earl Redington, labor on grounds, 12 days, at $2.00	24.00
Harry Williams, labor on grounds, 2 days, at $2.00	4.00
W. J. Hilles, mowing grass, 4 5-10 days, at $1.75	7.88
John Taylor, cleaning buildings, 3 days, at $1.75	5.25
B. D. Shriver, mowing grass, ½ day, at $2.00	1.00
F. A. Wigton, painting, 5 days, at $2.00	10.00
Geo. Schmidt, work on streets and walks, 2 days, at $2.00	4.00

E. O. Lacey, work on streets and walks, 1 day, 9 hours, at $2.00	3.80
Walter Snyder, work on streets and walks, ½ day, at $2.00	1.00
John Astley, work on horse barn fill and grounds, 1½ days, at $2.00	3.50
Andrew Keyes, horse barn fill and streets, 9 days, at $2.00	18.00
Wm. Hearshman, work on streets and walks, 3 days, 9 hours, at $4.00	15.60
Chas. Morrison, work on race track, 7 days, at $3.50	24.50
James Johnson, work on horse show ring and horse barn fill, 1 11-20 days, at $4.00	6.20
James Batten, labor on grounds, 1 day, at $2.00	2.00
J. W. Sackrider, work on fence and grounds, 4 days, 2 hours, at $2.00	8.40
W. Mayo, amphitheater chairs and fence, 5 days, 2 hours, at $2.00	10.40
Geo. W. Williams, dog show, 1½ days, at $2.00	3.00
Harley Thornton, work on race track and streets, 4 days, at $4.00	16.00
Dick Ledgerwood, work on race track and wild west show, 2 days, at $4.00	8.00
I. B. Brown, work on horse barn fill fence and grounds, 13 days, 8 hours, at $4.00	52.20
Joe Moyer, work on race track, 2 7-10 days, at $4.00	10.80
Dan Doughenbaugh, labor on grounds, 14 days, 1 hour, at $4.00	56.40
Carl Heggen, work on light system and amphitheater chairs and grounds, 14 days, 4 hours, at $3.00	43.20
Sam Chamberlain, labor on grounds, 12 days, at $2.00	24.00
G. A. Turner, labor on grounds, 4 days, at $2.25	9.00
Jake Berger, labor on grounds, 13 days, at $2.50	32.50
Arthur Duncan, labor on grounds, 12 days, at $2.75	33.00
G. E. Buck, labor on grounds, 13 days, at $2.50	32.50
Walter Hunt, turn stiles and Administration building, 13 days, at $3.00	39.00

J. H. Bailey, painting, 13 days, at $2.25	29.25
H. P. Stouffer, labor on grounds, 11 days, 7 hours, at $3.00	35.10
Noble Stutsman, labor on grounds, 13 days, at $2.50	32.50
F. L. Clayton, labor on grounds, 12 days, at $2.00	24.00
Dave Dickey, labor on grounds, 13 days, at $2.50	32.50
A. F. Thornley, horse barn fill, ½ day, at $2.00	1.00
G. W. Scott, Agricultural building, 13 days, at $2.50	32.50
T. W. Davis, labor on grounds, 13 days, at $2.50	32.50
Dan Hoppes, labor on grounds, 12½ days, at $2.50	31.25
D. C. King, labor on grounds, 6½ days, at $2.50	16.25
T. C. Campbell, labor on grounds, 13 days, at $2.00	26.00
M. Burnett, labor on grounds, 13 days, at $2.00	26.00
Frank Miracle, labor on grounds, 13 at $2.00	26.00
Albert Spevack, work on stalls, horse barn and shower baths, 13 days, at $2.00	26.00
E. F. Rumans, work on cattle barns and grounds, 4½ days, at $2.00	9.00
A. W. Shaw, labor on grounds, 12 days, at $2.00	24.00
Geo. Hardie, water boy, 3 days, at 75 cents	2.25
W. Warrington, painting, 11 days at $2.00	22.00
Roy Finley, painting and work in camp grounds, 13 days, at $2.00.....	26.00
Don Paul, painting and work in camp grounds, 13 days, at $2.00..........	26.00
Henry Grandgeorge, labor on grounds, 12½ days, at $2.50	31.25
Chas. Doughenbaugh, cleaning buildings and work on account of dog show, 3½ days, at $2.00...........	7.00
O. Iseminger, labor on grounds, 11 days, at $4.00	44.00

		Caleb Johns, work on race track and drainage and cleaning grounds, 23 days, 6 hours, at $4.00	94.40	
		Homer Brown, labor on grounds, 7 days, 1 hour, at $4.00	28.40	
		Sam Thornton, labor on race track, 2 days, at $4.00	8.00	
		Seth Stewart, labor on grounds, 11 days, 7 hours, at $4.00	46.80	
		Homer McCoy, labor on grounds, 29 days, at $4.00	116.00	
		Isaac Stewart, labor on grounds, 10½ days, at $4.00	42.00	
		D. O. McAlister, labor on light system, 17 days, 7 nights, at $3.85	68.14	
		A. Allcox, labor on light system, 14 days, at $3.50	49.00	
		R. E. O'Brien, labor on light system, 12 7-9 days, at $3.50	44.61	
		J. McClellan, labor on light system, 17 3-9 days, at $3.50	60.67	
		C. A. Powers, labor on light system, 16 6-9 days, at $3.50	57.95	
		E. H. Deemer, painting, 1 day, at $2.00	2.00	
				2,793.72
8-27	9606	Ben Barnes, services, superintendent amusements		75.00
8-27	9607	Pain Fireworks Display Co., 2d payment 1912 fireworks contract		500.00
8-27	9608	Pain Fireworks Display Co., 3d payment 1912 fireworks contract		500.00
8-27	9609	M. C. Wheeler, advertising Winnebago county		10.00
8-27	9610	J. R. Sterling, advertising Hamilton county		20.00
8-27	9611	G. P. Kline, 65½ bushels corn, forage department		45.85
8-27	9612	M. Duncan, 91 bushels, 23 pounds oats, forage department		25.68
8-27	9613	F. M. Barnes, superintendent of attractions 1912 fair		221.00
8-27	9614	Pains Fireworks Display Co., 4th payment 1912 fireworks contract		500.00
8-29	9615	Wm. McKirdy, judge Clydesdale horses		125.00
8-29	9616	Wm. Bell, judge Percheron horses		125.00
8-29	9617	Alex Galbraith, judge Belgian and Hackney horses		125.00
8-29	9618	F. M. Barnes, Inc., part payment attraction contract (1912)		2,500.00
8-29	9619	F. M. Barnes, Inc., final payment attraction contract (1912), and 50 3-sheet lithographs		209.00
8-29	9620	C. G. Allen, 10 tons, 1,015 pounds straw, forage department		52.54

8-29	9621	Sam Thornton, 10 tons, 785 pounds hay, forage department	124.71
8-29	9622	Pains Fireworks Display Co., final payment 1912 fireworks contract	250.00
8-29	9623	H. S. Oxley, special electrician, night show	6.75
8-29	9624	W. E. Tanner, special electrician, night show	6.75
8-29	9625	R. C. Shostrum, special electrician, night show	6.75
8-20	9626	Ora Steward, 12 tons, 395 pounds hay, forage department	146.38
8-30	9627	L. H. Thornton, 7 tons, 875 pounds straw, forage department	44.19
8-30	9628	P. O. Weaver, 9 tons, 1,490 pounds timothy hay; 11 tons, 1,630 pounds clover hay; 727 bushels, 6 pounds oats, forage department	487.70
8-30	9629	A. B. Cooper, box apple exhibit, expense	65.36
8-30	9630	Laurenz Green, box apple exhibit, expense	50.90
8-30	9631	Spratts Patent Ltd., final payment rent dog benching	103.00
8-30	9632	A. E. Danforth, Spieler, Indian Village	25.00
8-30	9633	Walter Stanton, attraction contract 1912	250.00
8-30	9634	VOID.	
8-30	9635	A. Liberati, final payment 1912 band contract	1,520.00
8-30	9636	B. O. Worrell, Mgr., band contract 54th Infantry Band, of Ottumwa	875.00
8-30	9637	C. P. Graham, orchestra contract 1912	409.00
8-30	9638	Geo. M. Rommell, judge, horse department	125.00
8-30	9639	P. Conway, band contract 1912	2,500.00
8-30	9640	National Aeroplane Co., 1st payment aeroplane contract (1912)	800.00
8-30	9641	Thos. W. Bell, manager stock pavilion night show	150.00
8-30	9642	O. J. Mooers, "Poetry of Motion" attraction	100.00
8-30	9643	W. A. Dobson, judge, horse department	75.00
8-30	9644	Jeffers chautauqua orchestra, 1st payment, contract 1912	406.00
8-30	9645	Jeffers chautauqua orchestra, 2d payment contract 1912	50.00
8-30	9646	Cressey and Wingate, general decorating contract 1912	500.00
8-30	9647	National Aeroplane Co., final payment aeroplane contract (1912)	677.82
8-30	9648	M. W. Cripliver, property man night shows	41.40
8-30	9649	J. Duree, property man night shows	41.40
8-30	9650	Dan Davis, special detective, 1912 fair	69.30
8-30	9651	Paul Storm, office boy, administration building.	18.00
8-30	9652	Leslie Lynch, office boy, administration building.	18.00
8-30	9653	Leslie Lynch, office boy, administration building, 2d payment	4.50
8-30	9654	Paul Storm, office boy, administration building, 2d payment	4.50

8-30	9655	Irwin Bros., Cheyenne Show contract 1912 fair.	12,000.00
8-31	9656	O. A. Olson, freight horses and vehicles, admission department	40.80
8-31	9657	C. E. Cameron, per diem and mileage, board meeting	98.00
8-31	9658	O. A. Olson, per diem and mileage, board meeting	99.50
8-31	9659	R. S. Johnston, per diem and mileage, board meeting	99.80
8-31	9660	C. W. Phillips, per diem and mileage, board meeting	105.00
8-31	9661	Elmer M. Reeves, per diem and mileage, board meeting	100.30
8-31	9662	E. J. Curtin, per diem and mileage, board meeting	103.50
8-31	9663	E. M. Wentworth, per diem and mileage, board meeting	98.00
8-31	9664	T. C. Legoe, per diem and mileage, board meeting	92.50
8-31	9665	C. F. Curtiss, per diem and mileage, board meeting	87.70
8-31	9666	F. E. Sheldon, per diem and mileage, board meeting	96.30
8-31	9667	J. F. Summers, per diem and mileage, board meeting	95.70
8-31	9668	J. P. Mullen, per diem and mileage, board meeting	95.80
8-31	9669	H. L. Pike, per diem and mileage, board meeting	104.00
8-31	9670	A. Olson, cleaning amphitheater, 6 days	122.50
8-31	9671	W. C. Brown, superintendent concessions	500.00
8-31	9672	W. C. Brown, expense concession department	19.50
8-31	9673	Club dining hall, State Day banquet expense	126.25
8-31	9674	Ted Woodward, horse and buggy ticket department	22.50
8 31	9675	O. A. Olson, expense attending Cheyenne Shows, Cheyenne, Wyoming	46.50
8-31	9676	E. J. Curtin, ticket refund	2.50
8 31	9677	A. P. McAnalty, assistant superintendent grounds	84.00
8-31	9678	T. C. Legoe, expense account Fine Arts department	4.85
8-31	9679	Iowa State Pioneers Association, expense Pioneer Day	131.75
8-31	9680	W. H. Middleton, special electrician, general switch board	44.00
8-31	9681	C. W. Patti, fireman administration building, boiler	20.00
8-31	9682	Harrison Nutter, fireman dining hall boiler	24.00
8-31	9683	J. H. Deemer, rent buggy admissions department	5.00
8-31	9684	A. R. Corey, allowance for board, 1912 fair	25.00
8-31	9685	G. S. Gilbertson, allowance for board, 1912 fair.	25.00
9- 4	9686	M. W. Cripliver, distributing advertising matter, Des Moines	6.00
9- 4	9687	C. J. Trawver, 18 tons, 120 pounds hay, forage department	198.66

9- 5	9688	Des Moines Post Card Co., 4,132 post cards......		20.61
9- 5	9689	L. Gibson, scavenger contract 1912		75.00
9- 5	9690	Vere Loper, assistant rest cottage		22.50
9- 5	9691	A. R. Corey, Secy., pay roll school department.		
		A. V. Storm, 10 days.................$	40.00	
		E. C. Bishop, 9 days	36.00	
		J. E. Cundy, 11 days	44.00	
		Ruth Lamson, 11 days	33.00	
		J. O. Mitchell, 11 days................	38.50	
		J. A. Mitchell, 4 days	6.00	
		Nieta Estabrook, 2 days	5.00	
		Ruth Beem, 1 day	2.00	
				204.50
9- 5	9692	A. R. Corey, Secy., pay roll secretary's office: August.		
		Minnie Anderson, city office, 15 days at $2.50 ....$	37.50	
		Minnie Anderson, grounds office, 14 days, at $4.00	56.00	
		Bess Williams, city office, 15 days, at $2.50	37.50	
		Bess Williams, grounds office, 14 days, at $4.00	56.00	
		Clifford C. Heer, city office, 17 days, at $3.00	51.00	
		Clifford C. Heer, grounds office, 14 days, at $4.00	56.00	
		Geo. K. Scott, city office, 16 days, at $2.50	40.00	
		Geo. K. Scott, grounds office, 14 days, at $4.00	56.00	
		Hubert Tiernan, city office, 15 days, at $1.00	15.00	
		Hubert Tiernan, grounds office, 14 days, at $2.00	28.00	
		Buena Reed, city office, 15 days, at $2.25	33.75	
		Buena Reed, grounds office, 7 days, at $3.50	24.50	
		Zoa Keating, city office, 15 days, at $2.00	30.00	
		Zoa Keating, grounds office, 7 days, at $3.50	24.50	
		Volney Diltz, advertising city, 2 days, at $3.00	6.00	
		Neal Van Meter, programs on grounds, 1 day, at $3.00	3.00	
		J. F. W. Urba, telephone collector, 1 day, at $2.50	2.50	

		C. A. Nash, grounds expense, 14 days, at $1.50	21.00	
		Elsie Colton, grounds expense, 14 days, at $1.50	21.00	
		Edith K. Smith, grounds expense, 14 days, at $2.50	35.00	
				634.25
9- 5	9693	A. R. Corey, Secy., pay roll publicity department:		
		Donald Granger, assistant, 7 days, at $2.75 $	19.25	
		Ira Wright, assistant, 7 days, at $2.75.	19.75	
		Harry A. Houtman, assistant, 6 days, at $2.75	16.50	
		Jeanette Williams, assistant, 7 days, at $2.00	14.00	
		Elsie Swan, assistant, 2 days, at $2.75.	5.50	
		Lester Mugge, assistant, 1½ days, at $2.00	3.00	
		Roger Williams, assistant, 3 days, at $2.00	6.00	
				83.50
9- 5	9694	A. R. Corey, Secy., pay roll forage department:		
		Geo. A. Wilson, superintendent forage, 20 days, at $5.00 $	100.00	
		E. H. Deemer, assistant, forage, 14 days, at $2.50; 11 days, at $4.00	79.00	
		J. H. Geesman, assistant, forage, 10 days, at $3.50	35.00	
		. T. Willey, assistant, forage, 10 days, at $3.50	35.00	
		Arthur Van Storm, policeman, 9 days, at $2.50	22.50	
		Chas. Morrison and team, delivery man, 13 days, at $5.00	65.00	
		Will Keeling and team, delivery man, 12 days, at $5.00	60.00	
		Merlin Morrison and team, delivery man, 12 days, at $5.00	60.00	
		Lester Smith, helper, 12 days, at $3.00.	36.00	
		Ora Hicks, helper, 12 days, at $3.00	36.00	
		John Harris, helper, 12 days, at $3.00	36.00	
		Willie Peters, helper, 12 days, at $3.00	36.00	
				600.50
9- 5	9695	A. R. Corey, Secy., railroad fare for boys at Boys' encampment:		
		Theo. Abkes, Austinville $	3.90	
		Leo Ahart, Dow City	5.77	
		Ivan K. Akers, Laurel	2.36	
		Allbrich Clement, Mapleton	5.84	

Wm. Anderson, St. Charles	1.16
Wm. Ashby, Lucas	1.92
M. Myron Axtell, Strawberry Point	6.12
Earl Benton, Rockwell City	3.15
Asker F. Bergo, Northwood	5.68
Mart Brooks, Thompson	5.96
Santford Bryson, Mason City	5.09
Claude Burns, Minburn	1.08
Ernest Cherry, Walker	6.68
John L. Chew, Adair	2.38
Jno. Cody, Cylinder	5.62
Colony Eugene, North Liberty	5.07
Merrill Drury, Early	4.64
Dale Dunlap, Sigourney	3.46
John Day, Afton	2.32
Orlo Drennan, Mt. Etna	4.48
Lester Day, Waterloo	3.88
Otis Dickey, Redfield	1.28
Rudolph Evans, Decorah	8.16
Dean Finch, Ida Grove	5.70
Wilbur Finn, Shenandoah	6.40
Forest H. Ford, Tipton	7.61
Ralph Fretz, Atlantic	3.28
Donald Ginger, Langdon	6.26
Albert Hansen, Alta	5.66
Hulef Hanson, Elkhorn	4.12
Ralph Harper, Nevada	1.67
Jno. W. Hazlett, Tripoli	5.70
Earl Heaton, Elberon	4.60
Jno. C. Hedrick, Osceola	2.32
Isaac C. Henderson, Paullina	7.62
Daniel Holcomb, Douds Leando	4.44
Lloyd Hudson, Knoxville	1.40
Emslie Hutcheon, Jefferson	2.70
Eugene Hoyinga, George	7.08
Lowell Johnson, Cresco	9.00
Wayne Kauffman, Whitten	3.70
Edw. Knotek, Washington	4.60
Dolph Lane, Bloomfield	4.73
Erwin Larson, Forest City	5.96
Harland Link, Waukon	10.74
Wm. L. Logan, Hillsboro	6.64
Gale McClean, Wilton Jct.	6.25
Loren E. McClure, St. Charles	1.16
Howard McCormick, Sumner	5.32
Henry T. Mammin, McClelland	5.02
Arthur Marshall, Battle Creek	5.76
Clifford Mason, Melrose	3.32
Howard Mawdsley, Burt	5.28

		Ray Menzel, Hazleton	5.32	
		Boyd E. Metier, Weldon	3.00	
		Irving W. Moe, Montgomery	7.10	
		Francis Mohler, Bedford	5.00	
		Clyde Naylor, Stratford	2.68	
		Hayes W. Parsons, Fairfield	4.68	
		Arthur Oppendahl, Goldfield	3.97	
		Homer Pattison, LeMars	7.46	
		Ralph Perkins, Rose Hill	2.52	
		Guy Peterson, Cherokee	6.10	
		Harry Rensink, Boyden	8.04	
		Chester Richards, Estherville	7.11	
		Lloyd Riley, Norway	4.32	
		Sahl Thorwald, Harlan	4.50	
		Dean Siverly, Diagonal	3.00	
		Llewellyn Smith, Keystone	4.60	
		Louis Smith, Dunlap	6.24	
		Robt. Sprague, Council Bluffs	5.66	
		Wm. H. Stacey, Osage	7.36	
		Raymond Teachout, Imogene	5.52	
		Fred Tennyson, Dudley	2.70	
		Leo Walker, Corydon	4.00	
		Geo. Wall, Burdette	3.04	
		Wm. J. Walsh, Zwingle	7.96	
		Harry Welsch, Elliott	3.86	
		Donald Wilcox, Melvin	6.66	
		Hugh Williams, Danville	5.92	
		Ellis D. Willis, Steamboat Rock	3.60	
		Ralph Winsler, Moravia	3.20	
		Earl Winslow, Marshalltown	2.30	
		Ralph Woodard, Webster City	3.21	
		Helpers.		
		O. E. Atkinson, Rockwell City	3.15	
		J. H. Abernathy, Jefferson	2.70	
		R. A. Fletcher, Mason City	4.84	
				411.36
9- 5	9696	A. R. Corey, Secy., pay roll dog show:		
		Walt Brindey, helper, 8 days at $2.50	$ 20.00	
		Roy Vanderwall, helper, 8 days at $2.50	20.00	
		C. E. Gilbert, helper, 3 days at $2.50	7.50	
		W. A. Briggs, helper, 4 days at $2.50	10.00	
		E. W. Merritt, ticket seller, 4 days at $2.50	10.00	
		R. C. West, ticket seller, 4 days at $2.50	10.00	
		Tom Ryan, speiler, 4 days at $6.25	25.00	
		Don Anderson, helper, 4 days at $1.00	4.00	
		A. W. Cates, asst. superintendent, 4 days at $2.50	10.00	
		Donald Munro, judging	163.00	

		Dr. C. A. White, judging	75.00	
		Ben Brindley, judging, 4 days at $2.50	10.00	
				364.50
9- 5	9697	C. F. Curtiss, Supt., pay roll horse dept.:		
		Chas. Rinehart, assistant horse dept., 13 days at $3.50	$ 45.50	
		Joe McCoy, assistant horse dept., 10 days at $3.50	35.00	
		C. N. Arnett, assistant horse dept., 8 days at $3.50	24.00	
		Robt. Baxter, assistant horse dept., 5 days at $3.50	17.50	
		Don L. Berry, assistant horse dept., 5 days at $3.50	17.50	
		Chas. Summers, assistant horse dept., 9 days at $3.50	31.50	
		C. N. Kennedy, megaphone work, 5 days at $2.50	12.50	
		Peter McFarlane, barn foreman, 9 days at $2.50	22.50	
		Harold Brenton, office boy, 9 days at $1.50	13.50	
				219.50
9- 5	9698	G. S. Gilbertson, Treas., pay roll treasurer's dept.:		
		L. M. Barlow, asst. treas	150.00	
		C. A. Isaacs, asst. treas	100.00	
		W. H. Heggen, asst. treas	50.00	
		Ed Sunberg, guard, 13 days at $4.00	52.00	
		Fred Johnson, guard, 10 days at $4.00	40.00	
		Phil Worth, reserved seat man	60.00	
		C. E. Lennina, guard at tent, 12 days at $3.25	39.00	
		Orville Petty, auto, 13 days at $12.00	156.00	
		M. A. Hauge, ticket seller, 11 days at $3.25	35.75	
		Geo. J. Heggen, ticket seller, 11 days at $3.25	35.75	
		J. A. Stanley, ticket seller, 11 days at $3.25	35.75	
		Chas. Gleadall, ticket seller, 11 days at $3.25	35.75	
		H. S. Redhead, ticket seller, 10 days at $3.25	32.50	
		T. A. Lawson, ticket seller, 11 days at $3.25	35.75	
		B. J. Stong, ticket seller, 10 days at $3.25	32.50	

		Paul Brown, ticket seller, 9 days at $3.25	29.25	
		H. A. Smith, ticket seller, 9 days at $3.25	29.25	
		Roe J. Thompson, ticket seller, 10 days at $3.25	32.50	
		Chas. Osgood, ticket seller, 10 days at $3.25	32.50	
		John Verba, ticket seller, 10 days at $3.25	32.50	
		R. S. Hayward, ticket seller, 9 days at $3.25	29.25	
		C. J. Ahern, ticket seller, 9 days at $3.25	29.25	
		Ed Byers, ticket seller, 7 days at $3.25	22.75	
		Hugh Jackson, ticket seller, 9 days at $3.25	29.25	
		Claude Patterson, ticket seller, 7 days at $3.25	22.75	
		Frank Rowat, ticket seller, 8 days at $3.25	26.00	
		S. W. Wright, ticket seller, 8 days at $3.25	26.00	
		C. F. Leach, ticket seller, 7 days at $3.25	22.75	
		M. A. Johnston, ticket seller, 7 days at $3.25	22.75	
		Vane Coen, ticket seller, 8 days at $3.25	26.00	
		Ezra Meredith, ticket seller, 8 days at $3.25	26.00	
		Ira Jones, ticket seller, 11 days at $3.25	35.75	
		Iowa Welch, ticket seller, 7 days at $3.25	22.75	
		Raymond Rogers, ticket seller, 7 days at $3.25	22.75	
		Wm. Sherman, ticket seller, 7 days at $3.25	22.75	
		Expense horse and buggy, 12 days at $1.50	18.00	
		Sundry expense	5.60	
				1,457.10
9- 5	9699	J. P. Mullen, Supt. pay roll, machinery dept:		
		C. H. Turk, 1st asst. superintendent, 60 days at $4.00	$ 240.00	
		C. H. Turk, 1st asst. superintendent, railroad fare	73.85	

		A. W. Sargent, 2d asst. superintendent, 20 days at $2.50	50.00	
		Paul Marsden, 3d asst. superintendent, 18 days at $2.50	45.00	
		Billy Sager, water hauler, 9 days at $6.50	58.50	
				467.35
9- 5	9700	J. F. Summers, Supt., pay roll, poultry dept.:		
		Geo. S. Phillips, assistant, 10 days at $3.00	$ 30.00	
		Verdon Reinhart, assistant, 9 days at $2.00	18.00	
		Herold Pammel, assistant, 8 days at $2.00	16.00	
		Wm. McMichael, assistant, 1 day at $2.00	2.00	
		Carl Dare, assistant, 9 days at $2.00	18.00	
		H. E. Burgus, assistant, 1 day at $2.00	2.00	
		L. W. Harkins, assistant, 3½ days at $2.00	7.00	
		Emerson Day, assistant, 8½ days at $2.00	17.00	
		E. L. Beck, 3 days clerk hire at $1.70	5.10	
		E. L. Beck, assistant supt., 18½ days at $4.00	74.00	
		W. S. Russell, judge	35.00	
		F. H. Shellabarger, judge	35.00	
		E. L. Beck, misc. expense	4.00	
				263.10
9- 5	9701	J. F. Summers, Supt., pay roll, sheep dept.:		
		M. G. Thornburg, 12 days at $4.00	48.00	
		W. S. Summers, 11 days at $4.00	44.00	
		R. F. Miller, judge	133.50	
		J. C. Duncan, judge	110.00	
				$ 335.50
9- 5	9702	O. A. Olson, Supt. pay roll admissions dept:		
		N. W. McBeath, captain pass gates, 10 days at $3.50	$ 35.00	
		Jasper Halvorson, pass gates, 7 days at $2.50	17.50	
		Harry Moore, pass gates, 10 days at $2.50	25.00	
		Roy Baird, pass gates, 10 days at $2.50	25.00	
		Verne Fairchild, pass gates, 10 days at $2.50	25.00	
		F. R. Black, pass gates, 10 days at $2.50	25.00	
		T. R. Baggs, pass gates, 10 days at $2.50	25.00	

E. C. Wartchow, pass gates, 10 days at $2.50	25.00
Seth Howard, pass gates, 10 days at $2.50	25.00
Glen Core, pass gates, 10 days at $2.50	25.00
B. A. Young, pass gates, 10 days at $2.50	25.00
A. H. Pierce, pass gates, 10 days at $2.50	25.00
Byron Crawford, pass gates, 10 days at $2.50	25.00
Glenn Summers, pass gates, 10 days at $2.50	25.00
C. G. Carson, pass gates, 10 days at $2.50	25.00
S. S. Foster, pass gates, 10 days at $2.50	25.00
Dick Brady, pass gates, 10 days at $2.50	25.00
R. D. M. Allen, pass gates, 8 days at $2.50	20.00
W. W. Bennett, pass gates, 10 days at $2.50	25.00
Wm. Lundberg, captain street car gates, 10 days at $3.50	35.00
G. S. Binford, street car gates, 10 days at $2.50	25.00
Howard Beadle, street car gates, 8 days at $2.50	20.00
Glen Willitts, street car gates, 10 days at $2.50	25.00
Albert Guy, street car gates, 9 days at $2.50	22.50
W. W. West, street car gates, 8 days at $2.50	20.00
E. N. Solverson, street car gates, 10 days at $2.50	25.00
Willis McCandless, street car gates, 8 days at $2.50	20.00
L. Aspenson, street car gates, 8 days at $2.50	20.00
Geo. Hilton, street car gates, 1 day at $2.50	2.50
L. McComb, street car gates, 3 days at $2.50	7.50
H. S. May, street car gates, 10 days at $2.50	25.00
C. F. Nolte, captain Grand avenue wagon gates, 10 days at $3.50	35.00

Albert Soles, wagon gates, 8 days at $2.50	20.00
P. F. Kopp, wagon gates, 10 days at $2.50	25.00
John Hacker, wagon gates, 10 days at $2.50	25.00
Wm. McCann, wagon gates, 10 days at $2.50	25.00
Frank Raddle, wagon gates, 8 days at $2.50	20.00
Grover Christ, wagon gates, 2 days at $2.50	5.00
A. L. Hume, captain Grand avenue turnstile, 10 days at $3.50	35.00
Wm. Nall, Grand avenue turnstile, 7 days at $2.50	17.50
L. B. Buchner, Grand avenue turnstile, 10 days at $2.50	25.00
A. C. Scott, Grand avenue turnstile, 7 days at $2.50	17.50
Chas. Peterson, Grand avenue turnstile, 8 days at $2.50	20.00
F. C. Corey, captain Rock Island gates, 10 days at $3.50	35.00
C. H. Combs, Rock Island gates, 8 days at $2.50	20.00
A. Field, Rock Island gates, 10 days at $2.50	25.00
Wilson Vaughn, Rock Island gates, 10 days at $2.50	25.00
Roy Budlong, Rock Island gates, 8 days at $2.50	20.00
J. H. Swink, Rock Island gates, 8 days at $2.50	20.00
E. A. Hanson, Rock Island gates, 5 days at $2.50	12.50
Oscar Holst, Rock Island gates, 8 days at $2.50	20.00
H. C. Conkling, Rock Island gates, 8 days at $2.50	20.00
Roy Cottrell, Rock Island gates, 8 days at $2.50	20.00
W. C. Brown, Rock Island gates, 8 days at $2.50	20.00
F. E. Yoder, Rock Island gates, 3 days at $2.50	7.50
Clyde Whiting, captain amphitheater, 10 days at $3.50	35.00

C. C. Colwell, usher amphitheater, 8 days at $2.50	20.00
Harry Hull, usher amphitheater, 8 days at $2.50	20.00
Harry Laird, usher amphitheater, 8 days at $2.50	20.00
Abe Thurston, usher amphitheater, 8 days at $2.50	20.00
B. O. Hanger, usher amphitheater, 8 days at $2.50	20.00
W. H. Reed, usher amphitheater, 8 days at $2.50	20.00
A. W. D. Bruyn, usher amphitheater, 8 days at $2.50	20.00
Dan Howard, usher amphitheater, 8 days at $2.50	20.00
Chas. Glatty, usher amphitheater, 8 days at $2.50	20.00
W. Maw, usher amphitheatre, 8 days at $2.50	20.00
Bruce Carson, usher amphitheater, 8 days at $2.50	20.00
B. A. Dunlap, usher amphitheater, 7 days at $2.50	17.50
Ellsworth Holden, usher amphitheater, 6 days at $2.50	15.00
F. E. Landis, usher amphitheater, 8 days at $2.50	20.00
J. A. McIntosh, usher amphitheater, 7 days at $2.50	17.50
H. C. Woorell, usher amphitheater, 3 days at $2.50	7.50
J. S. Parrish, usher amphitheater, 5 days at $2.50	12.50
Roger Fairchild, captain east entrance amphitheater, 6 days, at $3.50	21.00
Rex Olmstead, gates and turnstiles, 8 days at $2.50	20.00
A. Christianson, gates and turnstiles, 8 days at $2.50	20.00
H. Schmitz, gates and turnstiles, 8 days at $2.50	20.00
Jesse Brooker, gates and turnstiles, 8 days at $2.50	20.00
Ole White, gates and turnstiles, 8 days at $2.50	20.00
H. W. Chehock, gates and turnstiles, 8 days at $2.50	20.00

J. W. Long, gates and turnstiles, 8 days at $2.50	20.00
Thos. Egan, gates and turnstiles, 7 days at $2.50	17.50
Roy Weatherwax, gates and turnstiles, 8 days at $2.50	20.00
R. M. Holbrook, captain west entrance amphitheater, 8 days at $3.50	28.00
E. H. Scott, gates and turnstiles, 8 days at $2.50	20.00
Clark Draper, gates and turnstiles, 8 days at $2.50	20.00
C. H. Moe, gates and turnstiles, 8 days at $2.50	20.00
Robert Akes, gates and turnstiles, 8 days at $2.50	20.00
Glen Kirby, gates and turnstiles, 8 days at $2.50	20.00
H. R. Williams, gates and turnstiles, 7 days at $2.50	17.50
Tracy Wellman, gates and turnstiles, 4 days at $2.50	10.00
W. R. Hatch, captain quarter stretch, 8 days at $3.50	28.00
F. J. Wykoff, gates, 8 days at $2.50	20.00
J. R. Johnson, gates, 8 days at $2.50	20.00
O. L. Gray, captain bleachers, 8 days at $3.50	28.00
S. Peterson, P. gate and E. bleachers, 8 days at $3.50	28.00
J. W. Lindsay, captain plow gate, 8 days at $3.50	28.00
J. C. Overholtzer, plow gate, 7 days at $2.50	17.50
W. H. Maxwell, captain stock pavilion, 8 days at $3.50	28.00
Jno. Dietrich, stock pavilion, 6 days at $2.50	15.00
Isaac Halvorson, tent guard, 12 days at $2.50	30.00
Edwin Beard, tent guard, 8 days at $2.50	20.00
W. A. Hunt, mechanic, 5 nights at $1.00; 9 days at $3.00	32.00
A. Woolery, horseman, 17 days at $2.50	42.50
Jno. Wheeler, Asst. Supt. of admissions, 10 days at $4.00	40.00

		Al Severson, Asst. admission department, 10 days at $4.00	40.00	
		W. C. Skiffs, Asst. admissions department, 11 days at $4.00	44.00	
		B. M. Clark, Asst. admissions department, 11 days at $4.00	44.00	
				$ 2,436.00
9- 5	9703	C. W. Phillips, Supt., pay roll ticket department:		
		G. F. Tincknell, assistant superintendent tickets, 7 days, at $4.00	$ 28.00	
		Lew Burnett, assistant superintendent tickets, 8 days, at $4.00	32.00	
		Allie Cox, ticket collector, 11 days, at $3.25	35.75	
		J. U. Sammis, ticket counter, 11 days, at $3.25	35.75	
		Geo. Dunlap, ticket counter, 11 days, at $3.25	35.75	
		R. E. Coverdale, ticket counter, 11 days, at $3.25	35.75	
		Ben Phillips, ticket counter, 11 days, at $3.25	35.75	
		Arthur Horrigan, ticket counter, 11 days, at $3.25	35.75	
		Donald Judd, ticket counter, 6 days, at $3.25	19.50	
		Frank Beaton, ticket counter, 11 days, at $3.25	35.75	
		John Newman, ticket counter, 8 days, at $3.25	26.00	
				355.75
9- 5	9704	Wesley Greene, Supt., pay roll floricultural department:		
		John Temple, judge plants and flowers, 5 days, at $5.00	$ 25.00	
		Wesley Greene, superintendent, 11 days, at $4.00	44.00	
				69.00
9- 5	9705	E. M. Reeves, Supt., pay roll horticultural department:		
		J. W. Bennett, assistant, 10 days, at $3.75	$ 37.50	
		George Scott, labor, carpenter and cleaning, 4 days, at $2.00	8.00	
		Victor Felter, judge, 3 days, at $5.00	15.00	
		B. Stuart, judge, 2 days, at $5.00	10.00	
		E. M. Reeves, express on fruit	2.35	
		Clayton Garrett, expense box apple exhibit	5.25	

		E. M. Reeves, express and cartage on fruit boxes	3.48	
				81.58
9- 5	9706	T. C. Legoe, superintendent, pay roll fine arts department:		
		Gertrude Todd, judge, 3 days, at $5.00	$ 15.00	
		Gertrude Todd, judge, expense	12.80	
		Mrs. John Hess, judge, 5 days, at $5.00	25.00	
		J. H. Kelley, assistant superintendent, 13 days, at $4.00	52.00	
		Mrs. F. H. Shoenhut, assistant superintendent, 12 days, at $3.25	39.00	
		Margaret Scott, assistant superintendent, 11 days, at $3.25	35.75	
		Helen Wharton, assistant superintendent, 11 days, at $3.25	35.75	
		Ella Geneva, assistant superintendent, 11 days, at $3.25	35.75	
		W. G. Clements, clerk to superintendent, 9 days, at $3.25	29.25	
		Edna Patterson, assistant, 10 days, at $2.50	25.00	
		Eva Townsend, assistant, 9 days, at $2.50	22.50	
		Elsa Cornell, assistant, 9 days at $2.50	22.50	
		Marion Wentworth, assistant, 9 days at $2.50	22.50	
		W. W. Wilson, assistant, 4 days $2.50	10.00	
		Roy Bedford, assistant, 3 days at $2.50	7.50	
		William Thompson, assistant, 10 days at $2.50	25.00	
		Fred Allai, assistant, 10 days at $2.50	25.00	
		H. D. Ford, assistant, 3 days at $2.50	7.50	
		F. Bottorf, assistant, 2 days at $2.50	5.00	
		Edwin Willcockson, assistant, 10 days at $2.50	25.00	
				477.80
9- 5	9707	C. E. Cameron, Pres., pay roll janitors administration building:		
		Jeff Logan, custodian administration building, 22 days at $3.50	77.00	
		L. M. Brown, janitor, 21 days at $2.50	52.50	
		C. B. Brown, janitor, 19 days at $2.50	47.50	
		W. H. Birney, janitor, 18 days at $2.50	45.00	
		Henry F. Davis, janitor, 14 days at $2.50	35.00	
		Mrs. Maude Wilkerson, matron, 15 days at $2.50	37.50	
		M. B. Jackson, janitor, 20 days at $2.50	50.00	

		Thomas Harris, janitor, 5 days at $2.50	12.50	
		C. S. Stewart, janitor, 4 days at $2.50	10.00	
		Harry Hughes, janitor, 9 days at $2.50	22.50	
		Cliff Williams, janitor, 9 days at $2.50	22.50	
		Wesley Branch, janitor, 1 day at $2.50	2.50	
				414.50
9- 5	9708	W. C. Brown, Supt. pay roll ticket takers side shows:		
		C. W. Briggs, ticket taker, 7 days at $2.50	$ 17.50	
		H. Bender, ticket taker, 7 days at $2.50	17.50	
		H. Bryant, ticket taker, 7 days at $2.50	17.50	
		J. Beach, ticket taker, 7 days at $2.50	17.50	
		A. W. Weihn, work on walks and clean-		
		J. F. Coffin, ticket taker, 7 days at $2.50	17.50	
		H. Coen, ticket taker, 7 days at $2.50	17.50	
		V. E. Cherry, ticket taker, 7 days at $2.50	17.50	
		C. Christiansen, ticket taker, 7 days at $2.50	17.50	
		V. Diltz, ticket taker, 7 days at $2.50	17.50	
		H. Gross, ticket taker, 7 days at $2.50	17.50	
		J. H. Hamilton, ticket taker, 7 days at $2.50	17.50	
		R. D. Harold, ticket taker, 7 days at $2.50	17.50	
		Carl Meyers, ticket taker, 7 days at $2.50	17.50	
		H. H. Moyer, ticket taker, 7 days at $2.50	17.50	
		C. F. Mattern, ticket taker, 7 days at $2.50	17.50	
		Geo. McCreight, ticket taker, 7 days at $2.50	17.50	
		W. McDonald, ticket taker, 7 days at $2.50	17.50	
		A. Olmstead, ticket taker, 7 days at $2.50	17.50	
		A. E. Olson, ticket taker, 7 days at $2.50	17.50	
		G. W. Patterson, ticket taker, 7 days at $2.50	17.50	
		A. W. Renshaw, ticket taker, 7 days at $2.50	17.50	
		Roe, Chas., ticket taker, 7 days at $2.50	17 50	
		J. R. Sterling, ticket taker, 7 days at $2.50	17.50	

		Gage Stahl, ticket taker, 7 days at $2.50	17.50	
		R. Seaman, ticket taker, 7 days at $2.50	17.50	
		Fred Utterback, ticket taker, 7 days at $2.50	17.50	
		C. E. Wheeler, ticket taker, 7 days at $2.50	17.50	
		O. P. Willey, ticket taker, 7 days at $2.50	17.50	
		E. Easton, ticket taker, 5 days at $2.50	12.50	
		H. E. Kingman, ticket taker, 5 days at $2.50	12.50	
		V. B. Rex, ticket taker, 4½ days at $2.50	11.25	
		R. M. Lewis, ticket taker, 3 days at $2.50	7.50	
		Tom Walters, ticket taker, 2 days at $3.25	6.50	
		C. H. Leibsly, cashier, 8 days at $3.25	26.00	
		L. F. Rohde, cashier, 8 days at $3.25	26.00	
		Teddy Hinton, watchman, 8 days at $2.50	20.00	
		B. Breed, ticket man, 9 days at $3.75	35.75	
		R. W. Fuller, office, 10 days at $3.25	32.25	
				672.75
9- 5	9709	W. C. Brown, pay roll concessions department:		
		Pat Roach, concession department, 12 days at $4.00	$ 48.00	
		W. V. Palmer, concession department, 17 days at $4.00	68.00	
				116.00
9- 5	9710	R. S. Johnston, Supt., pay rolls swine dept.:		
		A. L. Goodenough, judge Hampshires	$ 50.00	
		N. H. Gentry, judge Chester Whites and Berkshires	75.00	
		C. C. Roup, judge Yorkshire and Tamworth	20.00	
		H. F. Hoffman, judge Duroc Jerseys	70.00	
		Harvey Johnson, judge Poland China	50.00	
		Fred Rood, judge Poland China	25.00	
		J. M. Stewart, judge Poland China	10.00	
		J. Carson Duncan, assistant superintendent, 9 days at $4.00	36.00	
		H. W. Baker, assistant superintendent, 10 days at $4.00	40.00	
		Helen Johnston, office assistant, 10 days at $4.00	40.00	
		Telegrams	.87	
				416.87

9- 5	9711	E. J. Curtin, Supt., pay roll speed department:		
		O. P. Updegraff, starter	$ 150.00	
		Magnus Flaws, presiding judge	100.00	
		J. F. Garrison, judge, 1 day, at $5.00	5.00	
		Parley Sheldon, judge, 6 days at $5.00	30.00	
		A. O. Laughlin, judge, 6 days at $5.00	30.00	
		L. H. Pickard, timer, 6 days at $5.00	30.00	
		J. T. Gill, timer, 6 days at $5.00	30.00	
		Read Kendall, timer, 6 days at $5.00	30.00	
		Geo. E. Hobbs, superintendent track, 11 days at $3.75	41.25	
		Railroad fare Des Moines and return	5.60	
		M. L. Markham, barn boss, 17 days at $3.00	51.00	
		E. A. Elliott, clerk of course, 14 days at $3.75	52.50	
		Railroad fare Des Moines and return	4.40	
		A. L. Denio, assistant superintendent speed, 12 days at $4.00	48.00	
		Railroad fare Des Moines and return	5.46	
		Judson Zentmire, call boy, 7 days at $3.25	22.75	
		Donald Hill, Jr., score boy, 7 days at $3.25	22.75	
		N. Van Meter, call boy, 7 days at $3.25	22.75	
		Albert Wind, announcing,	5.00	
		George Baker, uniform boy, 7 days at $3.25	22.75	
		Curley Holmes, blacksmith	10.00	
				719.21
9- 5	9712	E. M. Wentworth, Supt., pay roll police dept.:		
		O. A. McKinney, policeman, 5 days at $3.50; 14 days at $2.50	$ 52.50	
		R. Williams, policeman, 8 days at $2.50	20.00	
		W. S. Goodwin, policeman, 21 days at $2.50	52.50	
		Geo. D. Thomas, policeman, 9 days at $2.50	22.50	
		J. W. B. Cole, policeman, 10 days at $2.50	25.00	
		W. L. Wise, policeman, 10 days at $2.50	25.00	
		F. L. Randolph, policeman 12 days at $2.50	30.00	
		R. G. Whisler, policeman, 10 days at $2.50	25.00	
		M. F. Lockwood, policeman, 10 days at $2.50	25.00	

I. F. Hodson, policeman, 10 days at $2.50	25.00
A. Hollowell, policeman, 9 days at $2.50	22.50
G. O. Stansell, policeman, 3 days at $2.50	7.50
7 days at $3.50	24.50
S. B. Sands, policeman, 9 days at $2.50	22.50
H. Aldrich, policeman, 9 days at $2.50	22.50
R. C. Lillibridge, policeman, 9 days at $2.50	22.50
F. A. Robinson, policeman, 9 days at $2.50	22.50
J. W. Vader, policeman, 7 days at $2.50	17.50
C. G. Sears, policeman, 9 days at $2.50	22.50
A. Lucing, policeman, 9 days at $2.50	22.50
J. W. Carter, policeman, 12 days at $2.50	30.00
C. O. Breed, policeman, 9 days at $2.50	22.50
Henry Popham, policeman, 9 days at $2.50	22.50
B. M. Hester, policeman, 10 days at $2.50	25.00
T. C. Cree, policeman, 6 days at $2.50	15.00
Dan Staman, policeman, 8 days at $2.50	20.00
Frank M. Lockwood, policeman, 2 days at $2.50; 8 days at $3.50	33.00
R. E. Morgan, policeman, 9 days at $2.50	22.50
Robert Neal, policeman, 8 days at $2.50	20.00
W. O. DeSilva, policeman, 9 days at $2.50	22.50
M. B. Hester, policeman, 10 days at $2.50	25.00
D. B. Marshall, policeman, 8 days at $2.50	20.00
Earl E. Brown, policeman, 9 days at $2.50	22.50
B. H. Howell, policeman, 7 days at $2.50	17.50
H. L. Corbin, policeman, 7 days at $2.50	17.50
H. Ruttledge, policeman, 8 days at $2.50	20.00
Ed P. Ellyson, policeman, 8 days at $2.50	20.00
R. L. Downing, policeman, 9 days at $2.50	22.50

Wm. Wilson, policeman, 9 days at $2.50	22.50
H. D. Ford, policeman, 9 days at $2.50	22.50
R. E. Frederick, policeman, 7 days at $2.50	17.50
F. O. Bottroff, policeman, 8 days at $2.50	20.00
Roy H. Bedford, policeman, 8 days at $2.50	20.00
W. C. Miltharp, policeman, 10 days at $3.50	35.00
W. C. Miltharp, policeman, expense...	2.00
F. W. Steele, policeman, 7 days at $2.50	17.50
P. O. Bunker, policeman, 8 days at $2.50	20.00
Henry Johnson, policeman, 8 days at $2.50	20.00
James McClelland, policeman, 9 days at $2.50	22.50
Floyd Hamilton, policeman, 7 days at $2.50	17.50
J. G. Weiting, policeman, 8 days at $2.50	20.00
J. C. Schoch, policeman, 11 days at $2.50	27.50
J. B. Shuey, policeman, 7 days at $2.50	17.50
C. D. Danforth, policeman, 8 days at $2.50	20.00
B. F. George, policeman, 7 days at $2.50	17.50
Chas. J. Hall, policeman, 7 days at $2.50	17.50
J. F. Cowan, policeman, 7 days at $2.50	17.50
P. M. Jenks, policeman, 10 days at $2.50	25.00
L. D. Mallonee, policeman, 8 days at $2.50	20.00
I. Parks, policeman, 8 days at $2.50...	20.00
Oley Landey, policeman, 8 days at $2.50	20.00
L. L. Morris, policeman, 8 days at $2.50	20.00
Wm. Suppala, policeman, 7 days at $2.50	17.50
T. E. Wallace, policeman, 7 days at $2.50	17.50
E. W. Schull, policeman, 7 days at $2.50	17.50
John Ireton, policeman, 7 days at $2.50	17.50

A. J. Fulton, policeman, 7 days at $2.50	17.50
A. W. Sooth, policeman, 7 days at $2.50	17.50
B. Garthwaite, policeman, 7 days at $2.50	17.50
J. T. Mowerson, policeman, 7 days at $2.50	17.50
E. E. Erickson, policeman, 5 days at $2.50	12.50
Thomas Housholder, policeman, 2 days at $2.50	5.00
9 days at $2.50	22.50
James Jensen, policeman, 2 days at $2.50; 7 days at $3.50	29.50
J. M. Crockett, policeman, 7 days at $2.50	17.50
W. B. Brown, policeman, 7 days at $2.50	17.50
Verne Felter, policeman, 6 days at $2.50	15.00
Amos Martin, policeman, 7 days at $2.50	17.50
U. G. Mogle, policeman, 7 days at $2.50	17.50
F. Ostermeyer, policeman, 7 days at $2.50	17.50
Earl Hem, policeman, 7 days at $2.50	17.50
J. D. Prendergast, policeman, 7 days at $2.50	17.50
A. E. Metzger, policeman, 8 days at $2.50	20.00
John Martin, policeman, 7 days at $2.50	17.50
B. H. Cave, policeman, 7 days at $2.50	17.50
Frank Waggoner, policeman, 7 days at $2.50	17.50
C. Brittan, policeman, 1 day $2.50; 5 days at $3.50; 8 days at $4.00	52.00
A. Loomis, policeman, 6 days at $2.50	15.00
J. A. Scoville, policeman, 8 days at $2.50; 8 days at $3.50	48.00
L. A. Hunter, policeman, 8 days at $3.50	28.00
Roy Bever, policeman, 8 days at $3.50	28.00
Wm. Coin, policeman, 8 days at $3.50	28.00
W. O. Tillotson, policeman, 8 days at $3.50	28.00
L. D. Bruner, policeman, 8 days at $3.50	28.00
J. T. Powers, policeman, 8 days at $3.50	28.00

J. H. Mathis, policeman, 8 days at $3.50	28.00
A. C. Elliott, policeman, 8 days at $3.50	28.00
Walter Brown, policeman, 8 days at $3.50	28.00
Harvey Ellis, policeman, 8 days at $3.50	28.00
J. C. Posey, policeman, 2 days at $3.50	7.00
R. L. Clay, policeman, 2 days at $3.50	7.00
C. E. Meyers, policeman, 8 days at $3.50	28.00
S. E. Thornton, policeman, 8 days at $3.50	28.00
Ed Donoghue, policeman, 8 days at $3.50	28.00
H. R. Way, policeman, 8 days at $3.50	28.00
Seth Way, policeman, 8 days at $3.50	28.00
Will M. Johnson, policeman, 8 days at $3.50	28.00
S. W. Robbins, policeman, 7 days at $3.50	24.50
Lee Barns, policeman, 7 days at $3.50	24.50
L. H. Thornton, policeman 8 days at $3.50	28.00
Jerry Betts, policeman, 7 days at $3.50	24.50
L. C. Clark, policeman, 6 days at $3.50	21.00
J. D. Eveland, policeman, 7 days at $2.50	17.50
Dick Bye, policeman, 7 days at $2.50	17.50
H. W. Kempton, policeman, 8 days at $2.50	20.00
L. Hickman, policeman, 8 days at $2.50	20.00
Geo. Thompson, policeman, 8 days at $2.50	20.00
Chas. E. Miller, policeman, 6 days at $2.50	15.00
Jno. L. Thompson, policeman, 7 days at $2.50	17.50
M. Latham, policeman, 5 days at $2.50	12.50
Sam Woodcock, policeman, 5 days at $2.50	12.50
Frank Leonard, policeman, 5 days at $2.50	12.50
C. Childress, policeman, 5 days at $2.50	12.50
Harry Stover, policeman, 5 days at $2.50	12.50
J. W. Heath, policeman, 5 days at $2.50	12.50
S. Ellis, policeman, 5 days at $2.50....	12.50

B. Short, policeman, 3 days at $2.50	7.50
G. O. Jones, policeman, 5 days at $2.50	12.50
C. A. Roberts, policeman, 5 days at $2.50	12.50
A. N. Ellis, policeman, 5 days at $2.50	12.50
G. D. Taylor, policeman, 5 days at $2.50	12.50
B. W. Kennedy, policeman, 5 days at $2.50	12.50
Wm. M. Brown, policeman, 5 days at $2.50	12.50
Nat Wright, policeman, 5 days at $2.50	12.50
F. K. Stansell, policeman, 5 days at $2.50	12.50
G. P. Scovel, policeman, 5 days at $2.50	12.50
G. S. DeVore, policeman, 4 days at $2.50	10.00
L. A. Hasselquist, policeman, 2 days $2.50	5.00
A. W. Caunitt, policeman, 4 days at $2.50	10.00
Edward Hall, policeman, 4 days at $2.50	10.00
Seth Davis, policeman, 4 days at $2.50	10.00
H. L. Abernathy, policeman, 3 days at $2.50	7.50
A. C. Greene, policeman, 5 days at $2.50	12.50
James Johnson, policeman, 4 days at $2.50	10.00
A. D. Gibson, policeman, 2 days at $2.50	5.00
Charles Minton, policeman, 14 days at $2.50	35.00
John McClure, policeman, 3 days at $2.50	7.50
F. R. Davis, policeman, 1 day at $2.50	2.50
Anthony Baker, policeman, 6 days at $2.50	15.00
C. C. Helms, policeman, 5 days at $2.50	12.50
J. E. Kelley, policeman, 4 days at $2.50	10.00
C. S. Aldrich, policeman, 5 days at $3.50	17.50
O. M. Olsen, policeman, 5 days at $2.50	12.50
R. G. Orr, policeman, 5 days at $2.50	12.50
J. C. Gregory, policeman, 6 days at $2.50	15.00
R. D. Royster, policeman, 5 days at $2.50	12.50

		E. E. Babcock, policeman, 5 days at $2.50	12.50	
		J. R. Maher, policeman, 5 days at $2.50	12.50	
		J. J. Walker, policeman, 5 days at $2.50	12.50	
		L. M. Abernathy, policeman, 5 days at $2.50	12.50	
		B. W. Weaver, policeman, 4 days at $2.50	10.00	
		R. W. Roberts	33.00	
		M. W. Keating, superintendent camp grounds, 15 days at $3.50	52.50	
		Don Smith, 10 days at $2.00	20.00	
		T. J. Hudson, marshall	45.00	
		C. M. Akers, marshall	45.00	
		Carl Shields, marshall	45.00	
		Donald Hill, chief of police	55.00	
		C. A. Fulton, assistant chief of police, 11 days at $4.00	44.00	
		E. J. Frowick, captain, 8 days at $4.00	32.00	
		W. M. Clark, assistant superintendent, 11 days at $4.00	44.00	
		Frank Cox, watchman, 3 days at $2.50	7.50	
		W. H. Walker, assistant, transportation; 5 days at $2.50	12.50	
				3,569.00
9- 5	9713	F. E. Sheldon, Supt., pay roll agricultural department:		
		Hattie Shroyer, pantry department, 4½ days at $2.50 $	10.75	
		Lon Pollock, superintendent pantry department, 11 days at $4.00	44.00	
		Harry Laird, assistant pantry department, 4 days at $2.50	10.00	
		Don Shroyer, assistant pantry department, 11 days at $2.50	27.50	
		Maurice H. Keating, assistant pantry department, 8 days at $2.50	20.00	
		J. W. Coverdale, assistant agricultural department, 14 days at $4.00	56.00	
		M. E. Meyers, assistant agricultural department, 12 days at $2.50	30.00	
		Jno. P. Drake, janitor, agricultural building, 7 days at $2.50	17.50	
		Mrs. Barlow, judge pantry department	20.00	
		John Sunburg, judge corn	30.00	
		M. L. Bowman, judge grain and seeds	20.00	

		L. Burnett, assistant judge grain and seeds	20.00	
		Victor Felter, judge individual farm exhibits	30.00	
		Walter Plows, judge vegetables	30.00	
		Eugene Secor, judge honey, bees, etc.	10.00	
		Harry Hull, helper, 2 days at $2.50	5.00	
				380.75
9- 5	9714	H. L. Pike, Supt., pay roll cattle department:		
		W. H. Pew, assistant, 9 days at $4.00	$ 36.00	
		Edw. N. Wentworth, assistant, 10 days at $4.00	40.00	
		E. T. Ferrin, assistant, 6 days at $4.00	24.00	
		H. H. Kildee, assistant, 7 days at $4.00	28.00	
		Chas. Meltzer, ribbon clerk, 6 days at $2.50	15.00	
		Harry Staves, office boy, 8 days at $1.00	8.00	
		Will Forbes, judge Guernsey and Brown Swiss	65.95	
		Dr. M. B. Wood, judge Holstein and Ayrshire	78.10	
		W. L. Hunter, judge Jerseys	70.00	
		J. W. Wilson, judge Red Polls	62.00	
		E. R. Silliman, judge Polled Durham	30.00	
		A. J. Ryden, judge Short Horn	100.00	
		Chas. Escher, Jr., judge Galloway	65.00	
				622.05
9- 5	9715	Des Moines Engraving Co., engraving		18.15
9- 6	9716	Homestead Printing Co., first payment printing 1912		1,000.00
9- 6	9717	American Trotting Association, suspensions and fines, 1912		188.00
9- 6	9718	A. P. Haines, refund on collection of speed suspension		11.55
9- 6	9719	J. C. Iseminger, 21 tons, 870 pounds hay, forage department		257.22
9- 6	9720	Albert Henry, 23 tons, 385 pounds hay, forage department		278.31
9- 6	9721	E. Reeves, 3 tons, 940 pounds straw, forage department		19.08
9- 7	9722	C. A. Nash, salary, August		100.00
9- 7	9723	Elsie Colton, salary, August		100.00
9- 7	9724	J. H. Deemer, salary, August		100.00
9- 7	9725	Chas. Porter, advertising Marion county		12.00
9- 7	9726	Jas. Nowak, advertising Poweshiek county		10.00
9- 7	9727	Geo. E. Bliss, advertising Adams county		10.00
9- 7	9728	H. A. Russell, advertising Appanoose county		15.00
9- 7	9729	J. W. Richards, advertising Audubon county		12.00

9- 7	9730	Sol White, advertising Benton county	15.00
9- 7	9731	Herbert J. Long, advertising Bremer county ...	15.00
9- 7	9732	A. G. Rigby, advertising Buchanan county	15.00
9- 7	9733	W. J. Seivers, advertising Buena Vista county..	30.00
9- 7	9734	H. E. Churchill, advertising Carroll county....	15.00
9- 7	9735	C. E. Hoffman, advertising Cass county.........	15.00
9- 7	9736	Stevers Posting Service, advertising Crawford county	15.00
9- 7	9737	Chas. F. Leach, advertising Davis county.......	12.00
9- 7	9738	L. C. Hoffman, advertising Decatur county......	12.00
9- 7	9739	C. D. Williams, advertising Franklin county.....	10.00
9- 7	9740	E. V. McBroom, advertising Grundy county.....	20.00
9- 7	9741	A. B. Turner, advertising Hancock county.....	12.00
9- 7	9742	H. S. Martin, advertising Hardin county......	15.00
9- 7	9743	W. B. West, advertising Humboldt county......	15.00
9- 7	9744	F. E. Meredith, advertising Jasper county......	20.00
9- 7	9745	Geo. A. Hitchcock, advertising Johnson county..	10.00
9- 7	9746	Chas. F. Nolte, advertising Kossuth county....	15.00
9- 7	9747	C. C. Ward, advertising Lucas county..........	15.00
9- 7	9748	T. J. Hudson, advertising Madison county....	15.00
9- 7	9749	F. H. Houghton. advertising Marshall county....	15.00
9- 7	9750	Porter P. Black, advertising Muscatine county..	20.00
8- 7	9751	Carl Shields, advertising Union county........	15.00
9- 7	9752	John D. Gerdes, advertising Wayne county......	15.00
9- 7	9753	T. E. Grisell, advertising Guthrie county........	12.00
9- 7	9754	O. W. Mullen, advertising Pocahontas county..	10.00
9- 7	9755	D. M. Finch, assistant superintendent concession department	110.00
9- 7	9756	Iowa State Register and Farmer, 1912 advertising contract and cover page cut	207.70
9- 7	9757	W. H. Watson, lock repairs	1.35
9- 7	9758	Potts Bros., estimate cement work, machinery hall floor	600.00
9- 7	9759	L. Gibson, part payment 1912 garbage contract..	50.00
9- 7	9760	L. Gibson, final payment 1912 garbage contract.	125.00
9- 7	9761	E. W. Sweeney, 9 tons, 370 pounds straw, forage department	45.92
9- 7	9762	T. B. Lenan, 175 bushels, 5 pounds oats, forage department	49.05
9- 7	9763	Studebaker Corporation, water sprinkler attachment	65.00
9- 7	9764	Hawkeye Transfer Co., 1 truck, 2 dump boxes, miscellaneous implement repairs and twine...	159.90
9- 7	9765	State Insurance Co., refund on tickets........	2.50
9- 7	9766	Morrison Taxi Co.. expense aeroplane committee meeting	7.50
9- 7	9767	Mrs. Annah G. Crawford, miscellaneous expense additional land	3.60
9- 7	9768	W. J. Kennedy, judge Shetland ponies	50.00

9- 7	9769	Walter Palmer, judge saddle and harness horses		125.00
9- 8	9770	Ben J. Ness, sheriff, additional land condemned and expense		329.75
9- 8	9771	J. F. Summers, correction on per diem and mileage, board meeting		4.30
9- 8	9772	J. F. Summers, telegram, sheep department, July		3.22
9- 8	9773	Iowa Telephone Co., toll bills, Ames station		.25
9- 8	9774	Western Union Telegraph Co., telegrams, Ames station		2.37
9- 9	9775	Great Western Racing Circuit, dues 1912		90.00
9-10	9776	A. R. Corey, Secy., pay roll No. 22 (grounds):		
		August 25 to September 7, inclusive.		
		Chas. Doughenbaugh, amphitheater work, attractions, 3 days, 2 hours, at $2.00	$ 6.40	
		Jno. W. Wright, cleaning grounds, 3 days, at $2.00	6.00	
		Emanuel Hughes, work on fence, 3 days, at $2.00	6.00	
		Art Driscol, cleaning grounds, 3 days, at $2.00	6.00	
		Joe Dawson, cleaning buildings, 1 day, at $2.00	2.00	
		F. A. Harrison, cleaning grounds, 2 days, at $2.00	4.00	
		G. E. Buck, misc. work during fair, 3 days, 2 hours, at $2.50	8.00	
		A. W. Shaw, misc. work during fair, 3 days, 2 hours, at $2.00	6.40	
		E. F. Rummans, amphitheater work, attractions, 3 days, 9 hours, at $2.50	9.75	
		Albert Spevack, amphitheater work, attractions, 3 days, at $2.00	6.00	
		T. C. Campbell, cleaning grounds, 3 days, at $2.00	6.00	
		G. W. Scott, miscellaneous work during fair, 2 days, at $2.50	5.00	
		Dave Dickey, amphitheater work, attractions, 3 days, at $2.50	7.50	
		Noble Stutsman, stock pavilion, 3 days, at $2.50	7.50	
		Jake Burger, stock pavilion, 3 days, at $2.50	7.50	
		G. A. Turner, amphitheater work, attractions, 3 days, 4 hours, at $2.50	8.50	
		J. W. Bailey, cleaning grounds, 3 days, at $2.25	6.75	
		Seth Stewart, amphitheater work, attractions, 3 days, at $4.00	12.00	

Dick Ledgerwood, miscellaneous work during fair, 2 days, at $4.00	8.00
Leonard Olson, cleaning grounds, 2 days, at $2.00	4.00
John W. Post, cleaning grounds, 3 days, at $2.00	6.00
A. Alcox, light plant, 76 5-9 hours, at 39 cents	29.65
Grant Simpson, miscellaneous work during fair, 2 days, at $2.00	4.00
J. McLennan, light plant, 50 3-4 hours, at 39 cents	19.79
R. E. O'Brien, light plant, 31½ hours, at 39 cents	12.29
Geo. Whitney, foreman, 7 days, at $3.75	26.25
5 2-10 days, at $2.25	11.70
Carl Heggen, misc. work during fair and light plant, 12 days, 9 hours, at $3.00	38.70
W. S. Gooding, police department, 3 days, at $2.50	7.50
A. McKinney, police department, 3 days, at $2.50	7.50
J. A. Scovel, police department, 1 day, at $2.50	2.50
Homer McCoy, amphitheater work, attractions and cleaning grounds, 12½ days at $4.00	50.00
Henry Deets, cleaning buildings, 5 days, at $4.00	20.00
A. O. Ogden, miscellaneous work during fair, 3½ days, at $2.00	7.00
Wm. Waller, miscellaneous work during fair, 2 days, at $2.00	4.00
A. W. Deets, amphitheater work, attractions, 9 days, at $3.00	27.00
W. M. Morton, stock pavilion, attractions, 10 days, 2 hours, at $2.00	20.40
H. J. Smith, stock pavilion, attractions, 10 days, 2 hours, at $2.00	20.40
Hoyt Woodward, miscellaneous work during fair, 7 days, at $1.75	12.25
Jno. W. Post, cleaning grounds, 3 days, at $2.00	6.00
Geo. Hardie, water boy, 2 days, at 75 cents	1.50
Roy Barnes, water boy, 2 days, at $1.00	2.00
Roy Finley, camp grounds, 5 days, at $2.00	10.00

Don Paul, camp grounds, 6 days, at $2.00	12.00
Leo Paul, water boy, 6 days, 5 hours, at $1.25	8.13
Harvey Wilton, cleaning buildings, 5 days, 6 hours, at $2.00	13.20
R. Il'gam, cleaning grounds, 6 days, 5 hours, at $2.00	13.00
Thos. Bennett, miscellaneous work during fair, 5 days, 5 hours, at $2.00	11.00
Ted Woodward, light plant, 8 days, 2 hours, at $1.75	14.35
Geo. Whitmer, light plant, 9¼ days, at $1.75	16.19
Caleb Johns, cleaning grounds, 9 days, at $4.00	36.00
Sam Thornton, work on race tract, 4 days, at $4.00	16.00
Joe Moyer, work on race track and cleaning grounds, 21 days, at $4.00	84.00
Harley Thornton, work on race track, 6 days, at $4.00	24.00
I. B. Brown, cleaning grounds, 10 days, 8 hours, at $4.00	43.20
Dan Doughenbaugh, cleaning grounds and work on race track, 12 days, at $4.00	48.00
Homer Brown, cleaning grounds and placing chairs in amphitheater, 10 days, at $4.00	40.00
C. A. Powers, work on light plant, 129½ hours, at 39 cents	50.31
D. O. McAlister, work on light plant, 153 hours, at 42.7 cents	65.33
R. E. McLaughlin, work on light plant, 144½ hours, at 39 cents	56.35
E. A. Snow, labor on grounds, 11 days, 5 hours, at $3.00	34.50
T. W. Davis, miscellaneous work during fair, 12 days, at $2.50	30.00
Don Hoppes, miscellaneous work during fair, 7 days, at $2.50	17.50
D. C. King, miscellaneous work during fair, 6 days, at $2.50	15.00
M. Burnett, miscellaneous work during fair, 10 days, at $2.00	20.00
Arthur Duncan, miscellaneous work during fair, 6 days, 2 hours, at $2.75	17.06

Walter Hunt, miscellaneous work during fair, 1 day, at $3.00.............	3.00
Jas. Fredregill, labor on grounds, 7 days, 5 hours, at $4.00..............	30.00
Kenneth Fredregill, labor on grounds, 7 days, 5 hours, at $1.00............	7.50
H. P. Stouffer, miscellaneous work during fair, 11 days, 1 hour, at $3.00....	33.30
Henry Kurtz, labor on grounds, 12 days, at $2.00	24.00
Ed McCowan, cleaning grounds, 9 days, 5 hours, at $2.00	19.00
I. J. Whitmer, labor on grounds, 12 days, at $2.00	24.00
Earl Doughenbaugh, labor on streets, 2 days, at $2.00.....................	4.00
A. W. Wiehn, labor on grounds, 12 days, at $2.00	24.00
Chas. Newell, amphitheater work, attractions, 7 days, 9 hours, at $2.00..	15.80
S. T. Wilson, labor on grounds, 12 days, at $2.00	24.00
J. O. Fredregill, cleaning buildings, 7 days, 3 hours, at $2.00..............	14.60
Dan Widener, cleaning grounds, 8 days, 2 hours, at $2.00	16.40
Earl Reddington, cleaning grounds, 11 days, at $2.00	22.00
Chas. Brennan, labor on grounds, 12 days, at $2.00	24.00
Parker Douglas, labor on water system, 15 days, at $2.00	30.00
C. M. Dawson, amphitheater work, attractions, 8 days, 1 hour, at $2.00...	16.20
Theo. Broerman, cleaning buildings and grounds, 12 days, at $1.75............	21.00
Dan Faircloth, labor on water system, 12 days, 6 hours, at $2.25............	28.38
W. R. Wilkins, cleaning buildings, 11 days, 6 hours, at $2.00	23.20
Dallas Swartz, miscellaneous labor during fair, 8 days, 2 hours, at $2.00....	16.40
Jno. Olson, cleaning grounds, 11 days, at $2.00	22.00
D. B. Hughes, labor on water system and drainage, 14 days, 6 hours, at $2.00	29.20
Henry Grandgeorge, labor on drainage and streets, 11 1-3 days, at $2.50.....	28.25

Frank Maricle, labor on grounds, 11 days, at $2.00	22.00	
Chas. Doughenbaugh, labor on light system, 5 days, at $2.00	10.00	
O. Iseminger, labor on race track and cleaning buildings, 5½ days, at $4.00	22.00	
		1,719.08

Toilet Attendants.

Joe Wilson, toilets, 6 days, at $2.00	12.00	
Verne Simmons, toilets, 10 days, at $2.00	20.00	
Ben Elmore, toilets, 9 days, at $2.00	18.00	
W. Humburd, toilets, 8 days, at $2.00	16.00	
W. M. Parker, toilets, 7 days, at $2.00	14.00	
Wallace Baker, toilets, 6 days, at $2.00	12.00	
W. H. Elmore, toilets, 6 days, at $2.00	12.00	
F. Mappin, toilets, 6 days, at $2.00	12.00	
E. H. Hughes, toilets, 6 days, at $2.00	12.00	
Geo. Cleggett, toilets, 6 days, at $2.00	12.00	
Jas. Hill, toilets, 4 days, at $2.00	8.00	
Lizzie Elmore, toilets, 6 days, at $1.50.	9.00	
Anna Pettison, toilets, 6 days, at $1.50	9.00	
Mrs. A. H. Harrison, toilets, 7 days, at $1.50	10.50	
Hattie Deggs, toilets, 6 days, at $1.50	9.00	
Mrs. A. Walker, toilets, 8 days, at $1.50	12.50	
Mrs. S. Jeffries, toilets, 7 days, at $1.50	10.50	
Miles Baylor, toilets, 4 days, at $2.00	8.00	
Mrs. Vern Simmons, toilet, 9 days, at $1.50	13.50	
Susie Sims, toilets, 5 days, at $1.50	7.50	
Emma Dickens, toilets, 9 days, at $1.75	15.75	
A. Monroe, toilets, 9 days, at $2.00	18.00	
W. Branch, toilets, 8 days, at $2.00	16.00	
T. F. French, toilets, 8 days, at $2.00	16.00	
Marshall Howard, toilets, 8 days, at $2.00	16.00	
Robt. Bruce, toilets, 6 days, at $2.00	12.00	
Vina Rodgers, toilets, 8 days, at $1.50	12.00	
Martha Grimes, 8 days, at $1.50	12.00	
Rosa Seymore, toilets, 5 days, at $1.50	7.50	
Mrs. Geo. Darricott, toilets, 8 days, at $1.50	12.00	
Lena Print, toilets, 1 day, at $1.50	1.50	
Mrs. R. Townsend, toilets, 5 days, at $1.50	7.50	
Mrs. J. Stanton, toilets, 4 days, at $1.50	6.00	
Georgia Goss, toilets, 4 days, at $1.50	6.00	
		395.25

9-10	9777	G. S. Gilbertson, treasurer, correction of deposit, forage department	74.25
9-10	9778	Jesse Alexander, 13 tons, 1,190 pounds of hay, 7 tons, 425 pounds, straw; 270 bushels, 25 pounds, oats, forage department	275.02
9-10	9779	Pinkerton Nat'l Detective Agency, detective services, 1912 fair	177.00
9-10	9780	Colfax Mercantile Co., refund on tickets	4.50
9 10	9781	W. H. Knight, secy., collection fee, suspensions, speed department	8.10
9-12	9782	W. W. Moore, posting billboard paper, 1912	669.55
9-13	9783	Spirit of the West, 2d payment advertising speed program, 1912	62.50
9-13	9784	J. H. Abernathy, boys' camp expense	10.00
9-13	9785	O. A. Olson, expense attending Minnesota state fair	11.65
9-13	9786	O. A. Olson, per diem and mileage, executive committee meeting	27.50
9-13	9787	C. E. Cameron, expense attending Minnesota and Nebraska fairs	37.00
9-14	9788	C. E. Cameron, per diem and mileage, executive committee meeting	30.00
9-14	9789	W. B. Barney, superintendent dairy department	60.00
9-17	9790	Milt Persons, 138 bushels, 18 pounds, oats, forage department	38.23
9-17	9791	King Construction Co., grading contract horse barn, street car entrance, speed barn, draw gate at track and streets	1,656.55
9-17	9792	Massillon Bridge & Structural Co., balance on machinery hall contract, 1911	294.12
9-17	9793	Massillon Bridge & Structural Co., gates machinery hall	50.00
9-17	9794	Des Moines Bridge & Iron Co., 1st payment new street car entrance	3,000.00
9-17	9795	S. Joseph & Son, badges and buttons, 1912 fair	144.75
9-17	9796	J. S. Wilson Floral Co., plants and flowers (grounds)	298.14
9-17	9797	A. R. Corey, expense attending Nebraska and Minnesota state fairs	41.55
9-19	9798	Geo. K. Scott, extra clerk, 14 days, September	42.00
9-19	9799	Potts Bros., settlement on contracts for cement work, 1912	1,677.10
9-19	9800	Ora Williams, supt. publicity department, 1912	550.00
9-19	9801	American Press Assn., plate matter country advertising, 1912	544.53
9-19	9802	Farmer & Breeder, advertising contract, 1912	75.00
9-19	9803	Kimball's Dairy Farmer, advertising contract, 1912	91.00
9-19	9804	The Golden Egg, advertising contract, 1912	15.00

9-19	9805	Profitable Breeding & Farming Co., advertising contract, 1912	8.00
9-19	9806	The Road Maker, advertising contract, 1912	24.00
9-19	9807	Register & Leader Co., advertising contract, 1912.	406.80
9-19	9808	Des Moines Daily News, advertising contract, 1912	302.40
9-19	9809	Des Moines Capital, advertising contract, 1912	299.88
9-19	9810	Des Moines Electrical Co., light service, 1912	587.89
9-19	9811	C. & N. W. Ry. Co., freight, light fixtures	1.41
9-19	9812	Des Moines Fly Trap Co., 75 fly traps	56.25
9-19	9813	Mrs. Frank Carleton, matron rest cottage	30.45
9-19	9814	Fred Hethershaw, asst. supt. agricultural department, labor and grain decorations	410.00
9-19	9815	Sestier Bros., contract hauling manure, 1912	200.00
9-19	9816	H. L. Bode, refund swine pen rent	12.00
9-19	9817	Bureau of Advertising, 2 forms multigraph letters	5.50
9-19	9818	Bishard Bros., legal notice land condemnation	9.00
9-19	9819	E. D. Chassell, binding 1911 award books	6.25
9-19	9820	Des Moines Cabinet Co., turning 16 rollers for moving horse barns	5.60
9-19	9821	Des Moines Capital, advertising for bids, horse barns	10.50
9-19	9822	Des Moines Capital, advertising for bids, agricultural and machinery hall, floors and curb	8.13
9-19	9823	Des Moines Electric Co., freight, 2 transformers.	2.24
9-19	9824	Donaldson Litho. Co., billboard paper	176.00
9-19	9825	Des Moines Daily News, advertising house sale	3.50
9-19	9826	Chas. B. Lusk Calendar Co., 1200 hangers	56.35
9-19	9827	Jos. Meekma, refund swine pen rent	3.00
9-19	9828	Kenyon Prtg. Co., tinning hangers	6.50
9-19	9829	Iowa Seed Co., plants and flowers, grounds	9.00
9-19	9830	Wm. Trillow, plants and flowers, grounds	4.50
9-19	9831	Maplehurst Gardens, plants and flowers, grounds	11.25
9-19	9832	J. E. Lovejoy, balance on contract, machinery hall and closets	294.43
9-19	9833	Nat'l Aeroplane Co., 2M, 1 sheet posters	36.00
9-19	9834	Wm. J. Niles, 1 bbl. wall finish	5.17
9-19	9835	Percheron Society of America, stud book, vol. 13	3.00
9-19	9836	E. C. Snyder, number cards, poultry department and camp grounds	28.20
9-19	9837	Sciota Sign Co., cardboard and fibre signs	132.00
9-19	9838	A. O. Stanley, refund swine pen rent	4.00
9-19	9839	F. C. Tatro, refund swine pen rent	3.00
9-19	9840	Underwood Typewriter Co., 1 new typewriter and rent 3 machines 5 weeks	83.53
9-19	9841	American Litho. Co., miscellaneous printing	103.15
9-19	9842	Central Iron Works, 100 lawn seats	190.00
9-19	9843	H. V. Bright, turnstile and ticket chopper	110.00
9-19	9844	American Steel & Wire Co., 170 rods fence for new land	142.30

9-19	9845	Geo. A. Heyl, attraction contract, 1912	100.00
9-19	9846	Jno. W. Budd, laying out camp grounds	317.50
9-19	9847	Jno. A. Burris, civil engineer work, streets, machinery hall, bleachers and ground plans	163.50
9-19	9848	Woelfel Leather Co., 1 car spent tan bark for stock pavilion	65.75
9-19	9849	Weldon, Williams & Lick, coupon and strip tickets, 1912	94.35
9-19	9850	Jas. Fredregill, 1M brick Crawford house, additional land	8.75
9-19	9851	Wallace's Farmer, advertising contract, 1912	250.00
9-19	9852	Wallace's Farmer, printing Greater Iowa programs, etc.	309.30
9-19	9853	Smith Brooks Prtg. Co., 4M, 1 sheet hangers, Cheyenne show	128.00
9-19	9854	Rockford Steel Fixture Co., hay racks and mangers horse barns	850.00
9-19	9855	The Osborne Co., 3M hangers	219.52
9-19	9856	D. E. Moon & Co., miscellaneous printing	23.40
9-19	9857	Garfield Clothing Co., caps and jackets, speed department	76.70
9-19	9858	W. S. Frazier & Co., rent two sulkies	24.00
9-19	9859	Sam Frankenstein, rent searchlight and carbons for night show	28.00
9-19	9860	Globe Ticket Co., roll tickets	238.29
9-20	9861	Alex. Cruikshank, balance on property exchange, additional land	94.60
9-20	9862	Shannon & Mott Co., 1st payment, chop feed, 1912, forage department	1,160.00
9-20	9863	A. R. Corey, Secy., deposit on country advertising	2,500.00
9-20	9864	Louis Kurtz, P. M., postage	50.00
9-20	9865	J. E. Lovejoy, 3d estimate new horse barn	3,000.00
9-20	9866	Dr. Lena Means, nurse, babies' health contest	3.00
9-20	9867	Mary T. Watts, expense account babies' health contest	6.25
9-20	9868	Dr. Velura E. Powell, expense account babies' health contest	5.64
9-20	9869	Dr. Margaret Clark, expense account babies' health contest	4.24
9-21	9870	Dr. Kate Harpel, expense account babies' health contest	1.70
9-21	9871	Dr. Florence Sherborn, expense account babies' contest	2.80
9-21	9872	W. B. Barney, Supt., pay roll dairy department:	

August 22 to September 20, inclusive.

Brinsmaid & Co., material, spoons and dishes ....$ 4.44

		Wells, Fargo Express Co., express on ice cream from Oelwein	16.50	
		Richard Woodruff, labor, ice cream stand	9.25	
		Wells, Fargo Express Co., express on ice cream from Oelwein	5.50	
		Mrs. Lois Kearns, assistant ice cream stand	17.00	
		Rollin B. Johnson, janitor and watchman, 7 days	17.50	
		Geo. Kratz, assistant ice cream stand..	17.00	
		Rodney Hudson, assistant ice cream stand	16.75	
		Hilda Armstrong, assistant ice cream stand	15.00	
		Fred Hudson, assistant ice cream stand	14.50	
		Alice Moser, assistant ice cream stand	9.75	
		Lawrence Boutin, assistant butter scoring and ice cream stand	16.25	
		Mr. and Mrs. Gorrigan and Ethel, supervisors, ice cream stand	51.25	
		B. C. Iliff, assistant superintendent, 12 days	42.00	
		Langan Bros. Co., paper ice cream dishes	3.00	
		D. M. Tent & Awning Co., rental, two stoves	1.50	
		D. M. Tent & Awning Co., rental, one spring cot	.50	
		Saunders Ice Cream Co., 20 gallons ice cream	15.00	
		Stephenson & Nebreau, 100 gallons ice cream, at 58 cents per gallon........	58.00	
		T. A. Clark, butter judge	7.50	
		J. J. Ross, butter judge	7.50	
		H. E. Forrester, butter judge	7.50	
		Younker Bros., supplies	22.08	
		Hutchinson Purity Ice Cream Co., ice cream, 461 gallons	345.70	
		Bilz Sign Co., signs and decorating work	5.50	
		B. C. Iliff, cartage butter exhibit......	3.00	
				729.47
9-21	9873	H. B. Lizer, advertising Black Hawk county....		20.00
9-21	9874	Alex McLennan, advertising Iowa county........		20.00
9-21	9875	Lorren Perrin, advertising Monroe county......		12.00
9-21	9876	Wesley Green, planting flower grounds..........		43.40
9-21	9877	Iowa Telephone Co., toll bills, Ames station......		1.45

9-23	9878	A. R. Corey, secretary pay roll No. 23, grounds: September 9-21, inclusive.	
		Parker Douglas, labor on water system, 4½ days, at $2.00	$ 9.00
		Dan Doughenbaugh, labor on streets and cleaning grounds, 10 days, at $4.00	40.00
		I. B. Brown, labor on streets and cleaning grounds, 8½ days, at $4.00	34.00
		August Olson, cleaning grounds and buildings, 12 days, at $2.50	30.00
		Don Faircloth, labor on water system, 4½ days, at $2.25	10.12
		Carl Heggen, cleaning grounds, 11½ days, at $3.00	34.50
		A. W. Weihn, labor on streets and cleaning buildings, 12 days, at $2.00	24.00
		Jno. Olson, cleaning grounds and buildings, 8 days, at $2.00	16.00
		Henry Grandgeorge, cleaning grounds and buildings, 9 days, at $2.50	22.50
		I. J. Whitmer, cleaning grounds and labor on streets, 11 days, at $2.00	22.00
		R. L. Illgan, cleaning grounds, 6 days, at $2.00	12.00
		Jas. Fredregill, cleaning grounds, 1 day, at $4.00	4.00
		C. M. Dawson, cleaning buildings, 8-10 day, at $2.00	1.60
		J. O. Fredregill, cleaning buildings, 1½ days, at $2.00	3.00
		Chas. Doughenbaugh, cleaning buildings and work on light system, 5 days, at $2.00	10.00
		S. P. Wilson, cleaning grounds and buildings, 9 days, at $2.00	18.00
		M. Burnett, cleaning grounds, 1 day, at $2.00	2.00
		Geo. Whitney, foreman, 11½ days, at $2.25	25.87
		Theo. Broerman, cleaning grounds and buildings, 11 days, at $1.75	19.75
		Earl Reddington, cleaning grounds and buildings, 6 days, at $2.00	12.00
		D. O. McAlister, work on light system, 2 days, at $3.85	7.70
		H. P. Stouffer, cleaning grounds, 1 day, at $3.00	3.00

		E. A. Snow, cleaning grounds, 1 day, at $3.00	3.00	
		T. W. Davis, cleaning buildings, 1 day, at $2.50	2.50	
		Henry Kurtz, cleaning grounds and buildings, 10 days, at $2.00	20.00	
		Chas. Brennan, cleaning grounds and buildings, 10½ days, at $2.00	21.00	
		Ed McKowan, cleaning grounds and buildings, 9½ days, at $2.00	19.00	
		D. B. Hughes, cleaning grounds and buildings, 4 days, at $2.00	8.00	
				434.54
9-25	9879	Iowa State College, expense college exhibit 1912.		415.90
9-25	9880	Homestead Co., advertising contract 1912		250.00
9-26	9881	Geo. E. Sawyer, refund 3 swine pens		3.00
9-26	9882	J. H. Queal & Co., part payment lumber bill 1912		5,000.00
9-26	9883	O'Dea Hdw. Co., part payment hardware bill 1912		750.00
9-27	9884	David Erwin, threshing 506 bushels oats, grounds		12.65
9-30	9885	C. A. Nash, salary, September		125.00
9-30	9886	Elsie Colton, salary, September..................		100.00
9-30	9887	J. H. Deemer, salary, September		100.00
9-30	9888	Edith K. Smith, balance salary, September		10.00
9-30	9889	Minnie Anderson, extra clerk, September........		65.00
9-30	9890	Bess Willions, extra clerk, September, (20½) days)		51.25
9-30	9891	Geo. K. Scott, correction in salary, 1 day........		3.00
9-30	9892	Valley Junction Christian Church, dining hall, meals for boys' camp		660.66
9-30	9893	R. B. Ogilvie, judge horse department		125.00
10- 2	9894	F. W. Van Natta, judge cattle department		100.00
10- 8	9895	C., M. & St. Paul Ry. Co., freight and storage doors new horse barn		12.47
10- 8	9896	A. R. Corey, pay roll No. 24 (grounds): September 24-October 5, inclusive.		
		H. P. Stouffer, labor on closets and horse barns, 7½ days, at $3.00.....$	22.50	
		E. A. Snow, labor on closets and horse barns, 11 days, at $3.00...........	33.00	
		Tom Davis, labor on closets and horse barns, 11 days, at $2.50	27.50	
		M. Burnett, labor on closets and miscellaneous repairs, 11 days, at $2.00..	22.00	
		J. I. Whitmer, labor on tracks and walks, 11 days, at $2.00	22.00	
		Jno. Olson, labor on walks and drainage, 10 days, at $2.00	20.00	
		Theo. Broerman, cleaning grounds, 8 days, 4 hours, at $1.75	14.70	

		C. Brennan, labor on grounds, 11 days, at $2.00	22.00	
		H. Grandgeorge, drainage and miscellaneous repairs, 8½ days, at $2.00..	17.00	
		I. B. Brown, work on walks and streets, 11 days, at $4.00	44.00	
		S. T. Wilson, work on walks and miscellaneous repairs, 8½ days at $2.00	17.00	
		Ed McKowan, drainage, 1 day, 9 hours, at $2.00	3.80	
		Rudolph Illgan, drainage, 5½ days at $2.00	11.00	
		ing grounds, 12 days, at $2.00	24.00	
		I. B. Brown, work on walks and streets, 2½ days, at $4.00	10.00	
		Geo. Whitney, foreman, 5½ days, at $2.25	12.37	
				327.12
10-10	9897	A. R. Corey, secretary, balance country advertising		548.02
10-12	9898	W. H. Knight, secretary, collection of suspensions, speed department		5.00
10-12	9899	Manhattan Oil Co., road oil, gasoline and kerosene		747.73
10-12	9900	Ferguson Printing Co., printing		101.25
10-12	9901	R. McKimm, 1 ton, 235 pounds hay, forage department		13.41
10-14	9902	The Western Horseman, advertising speed program, 1912		85.89
10-14	9903	The Horseman, advertising speed program, 1912.		86.00
10-14	9904	The Horse Review, advertising speed program 1912		120.72
10-14	9905	Fred M. Hanson, superintendent boys' comp, 1912.		27.00
10-14	9906	Truman Smith, assistant boys' camp, 1912		20.00
10-14	9907	J. H. Abernathy, assistant boys' camp		17.30
10-14	9908	O. E. Atkinson, assistant boys' camp		16.85
10-14	9909	Ralph Fletcher, assistant boys' camp		12.16
10-14	9910	L. S. Huntley, refund 2 cattle stalls, 1912		4.00
10-14	9911	Walker Bros., refund 1 cattle stall, 1912		2.00
10-14	9912	Brown & Walker, refund horse stall rent, 1912		6.00
10-14	9913	Geo. E. Brown, refund horse stall rent, 1912		15.00
10-14	9914	Jos. C. Brunk, refund horse stall rent, 1912		2.00
10-14	9915	Ed Clapper, refund horse stall rent, 1912		2.00
10-14	9916	W. S. Corsa, refund horse stall rent, 1912		10.00
10-14	9917	Crawford & Griffin, refund horse stall rent, 1912.		4.00
10-14	9918	Fred Crawford, refund horse stall rent, 1912		4.00
10-14	9919	R. W. Crumpacker, refund horse stall rent, 1912.		4.00
10-14	9920	C. G. Dallas, refund horse stall rent, 1912		2.00
10-14	9921	W. L. De Clow, refund horse stall rent, 1912		72.00

10-14	9922	Loren Dunbar, refund horse stall rent, 1912	14.00
10-14	9923	Dunham's, refund horse stall rent, 1912	24.00
10-14	9924	Robt. Dyer, refund horse stall rent, 1912	2.00
10-14	9925	Geo. Eggert, refund horse stall rent, 1912	6.00
10-14	9926	W. & A. Graham, refund horse stall rent, 1912	4.00
10-14	9927	G. W. Grigsby, refund horse stall rent, 1912	2.00
10-14	9928	S. M. Hague, refund horse stall rent, 1912	2.00
10-14	9929	Hildebrand Bros., refund horse stall rent, 1912	4.00
10-14	9930	E. L. Humbert, refund horse stall rent, 1912	4.00
10-14	9931	F. L. Hutson & Son, refund horse stall rent, 1912	4.00
10-14	9932	Chas. Irvine, refund horse stall rent, 1912	2.00
10-14	9933	C. E. Jones, refund horse stall rent, 1912	12.00
10-14	9934	C. F. Jones, refund horse stall rent, 1912	2.00
10-14	9935	Henry Lefebure, refund horse stall rent, 1912	10.00
10-14	9936	Geo. M. McCray, refund horse stall rent, 1912	2.00
10-14	9937	J. N. B. Miller, refund horse stall rent, 1912	2.00
10-14	9938	Jas. Pedley, refund horse stall rent, 1912	2.00
10-14	9939	J. S. Risley, refund horse stall rent, 1912	2.00
10-14	9940	J. R. Rittenhouse, refund horse stall rent, 1912	2.00
10-14	9941	W. W. Seeley, refund horse stall rent, 1912	14.00
10-14	9942	Wild Rose Farm, refund horse stall rent, 1912	6.00
10-14	9943	F. R. Wilson, refund horse stall rent, 1912	1.00
10-14	9944	O. W. Roush, advertising Ringgold county	12.00
10-14	9945	Gus Strohmeier, advertising Sac county	15.00
10-16	9946	Bess Williams, extra clerk, 14 days October	35.00
10-17	9947	Potts Brothers, miscellaneous cement work	283.03
10-17	9948	O. A. Olson, per diem and mileage, executive committee meeting	27.50
10-18	9949	T. C. Legoe, per diem and mileage, auditing committee meeting	20.50
10-18	9950	C. E. Cameron, per diem and mileage, executive committee meeting	26.00
10-18	9951	Pray & Comerford, 17 shower heads and connections	24.35
10-19	9952	O. O. Smith, architect fees, horse barn	175.50
10-21	9953	Liebbe, Nourse & Rasmussen, architect fees, horse barn	126.47
10-21	9954	Adams Express Co., express bills, May, July and August	37.13
10-21	9955	American Express Co., express bills, May to September	77.55
10-21	9956	Buck Bros., picture wire	.25
10-21	9957	Bishard Bros., printing	83.50
10-21	9958	Beckman Bros., pipe and fittings	98.49
10-21	9959	Bureau of Advertising, multigraph letters	4.75
10-21	9960	Champagne Laundry Co., towel service (grounds) 1912	30.00
10-21	9961	Chase & West, 1 screen administration building	2.95
10-21	9962	Edward Cutler, pipe and cutoff	.90

10-21	9963	Cressey & Wingate, 60 yds. bunting for decorations	3.60
10-21	9964	G. W. Deitz, lime and cement (grounds)	77.60
10-21	9965	Des Moines Tent & Awning Co., rent, tents, cots, etc., 1912 fair	302.25
10-21	9966	J. H. Deemer, expense attending Minnesota state fair	19.70
10-21	9967	Des Moines Coal & Coke Co., 3 tons coal, dining hall	24.00
10-21	9968	Downing Electric Co., electrical supplies, light system	662.73
10-21	9969	Des Moines Rubber Stamp Works, brands, stencils and stamps	5.65
10-21	9970	Denniston & Partridge Co., distribution case, exposition building	25.76
10-21	9971	Capital City Printing Plate Co., 510 electros, country advertising	52.50
10-21	9972	A. R. Corning, miscellaneous supplies (grounds)	16.59
10-21	9973	Chamberlain Hotel, hotel bill N. B. Wood, cattle judge	10.00
10-21	9974	Jno. T. Christie & Co., insurance premiums	60.00
10-21	9975	Des Moines Bridge & Iron Works, balance structural iron work, street car entrance	842.46
10-21	9976	Des Moines Electric Co., new switchboard and light system supplies	597.70
10-21	9977	Des Moines Water Co., water bills, May to September inclusive	437.81
10-21	9978	Des Moines Seed Co., supplies poultry department	1.00
10-21	9979	Des Moines Daily Capital, subscription, 8-1-11, 10-1-12	3.50
10-21	9980	L. E. Frederick, correction on time, police department	2.50
10-21	9981	J. E. Graff, drugs, rest cottage	4.80
10-21	9982	Glenwood Coal Co., 23,900 lbs. coal, dining hall	44.82
10-21	9983	Globe Machinery & Supply Co., pipe repairs	2.74
10-21	9984	Green Foundry & Furnace Works, meter and sewer rings	20.00
10-21	9985	Goodwin Tile & Brick Co., cement blocks, tile and brick	77.82
10-21	9986	Homestead Printing Co., balance on job printing 1912	238.55
10-21	9987	A. O. Harpel, photos, grounds	5.50
10-21	9988	Robt. F. Hildebrand, 198 photos, 2 prints, 1912 fair	197.00
10-21	9989	Iowa Press Clipping Bureau, clipping service, 3-11-12 to 10-11-12	28.00
10-21	9990	International Harvester Co., miscellaneous machine repairs	7.29
10-21	9991	Iowa Seed Co., millet and grass seed	37.05

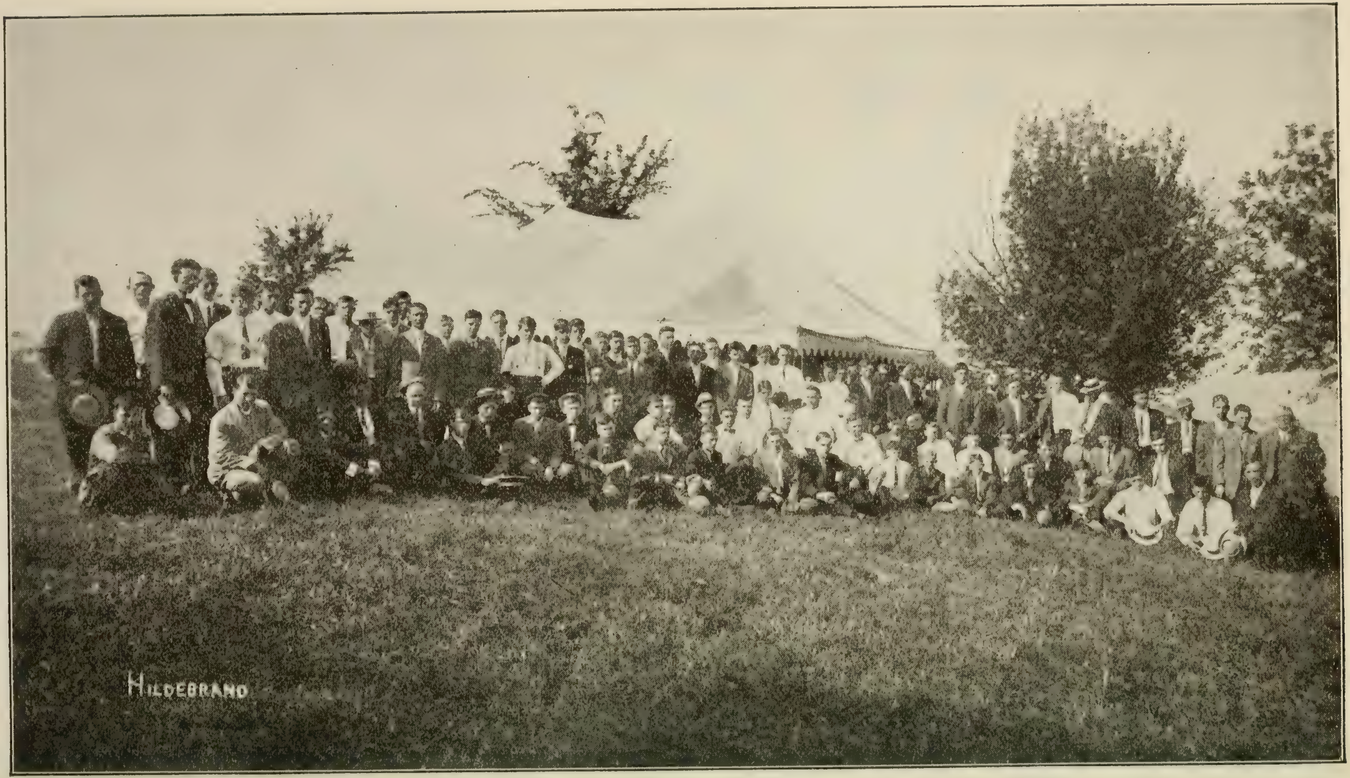
10-21	9992	Inland Prtg. & Dist. Co., printing	4.45
10-31	9993	Iowa Litho. Co., miscellaneous printing	97.98
10-21	9994	S. Joseph & Sons, engraving cups and medals 1912 fair	12.76
10-21	9995	Chas. Koeningsberger & Son, harness repairs, etc.	18.65
10-21	9996	Geo. L. Longshore, skids, rollers and sawdust	40.86
10-21	9997	Langan Bros., office and ground supplies	300.09
10-21	9998	Merchants' Transfer Co., freight and transfer charges	107.32
10-21	9999	Geo. A. Miller Prtg. Co., printing	.50
10-21	10000	McDonnell Boiler & Iron Works, boiler repairs, dining hall	148.46
10-21	10001	Merchants Laundry, laundry bills	1.05
10-21	10002	Mathews Carriage & Auto Co., machinery repairs	82.73
10-21	10003	Joe Moyer, storage hog crates, 1912	10.00
10-21	10004	McNamara-Kenworthy Co., office supplies	55.41
10-21	10005	O'Dea Hardware Co., balance hardware bill 1912	107.39
10-21	10006	Postal Telegraph Co., messages May and August	1.89
10-21	10007	Purcell Printing Co., printing premium lists	1,217.00
10-21	10008	Red Line Transfer Co., taking down smoke stack, fair grounds	25.00
10-21	10009	Stoner Wall Paper Co., papering Crawford house, additional land	4.11
10-21	10010	Sibley Gazette, advertising 1912 fair	3.75
10-21	10011	Standard Glass & Paint Co., glass, brushes and paint	1,057.35
10-21	10012	B. F. Swanson Co., rotary mimeograph and supplies	61.15
10-21	10013	Star Engraving & Prtg. Co., 500 4-page folders	3.75
10-21	10014	Shannon & Mott, final payment feed bill, forage department	196.33
10-21	10015	U. S. Express Co., express bills April to August	59.73
10-21	10016	Wells Fargo Co., express bills April to August	77.91
10-21	10017	Western Union Telegraph Co., messages May to September	89.90
10-21	10018	Western Newspaper Union, paper exposition building, tables	12.80
10-21	10019	A. H. Walker & Co., 8 sanitary drinking fountains	48.00
10-21	10020	Ben Woolgar, shoeing mules	12.00
10-21	10021	Willcox, Howell, Hopkins Co., insurance and ticket sellers bonds, premiums	432.63
10-21	10022	Younker Bros., dishes and cooking utensils, dining hall	54.47
10-21	10023	Davidson Bros., chairs, furniture, etc.	169.67
10-21	10024	Matilda Winterrowd, balance rent 9½ acre tract	35.50
10-22	10025	Stella Henderson, balance rent 10 acre tract	40.00

10-22	10026	A. R. Corey, Secy., pay roll No. 25, (grounds): October 7-19, inclusive.		
		Ed McKowan, labor on grounds, 2¼ days, at $2.00 ....$	6.50	
		H. P. Stouffer, labor on grounds, 7 days, at $3.00	21.00	
		I. B. Brown, grading and hauling manure, 8 days, at $4.00...............	32.00	
		I. B. Brown, grading and hauling manure, 8 days, at $4.00................	32.00	
		A. W. Weihn, grading, 12 days, at $2.00	24.00	
		John Olson, grading and miscellaneous work on grounds, 2 days, at $2.00....	4.00	
		Chas. Brennan, grading and hauling manure, 6 days, at $2.00	12.00	
		S. T. Wilson, grading, 9-10 days, at $2.00	1.80	
		I. J. Whitmer, labor on grounds, 10½ days, at $2.00	21.00	
		Geo. Whitney, foreman, 8 days, at $2.25	18.00	
		H. Grandgeorge, grading and drainage, 8 days, at $2.50	20.00	
		Theo. Broerman, painting, 8 days, at $1.75	14.00	
		E. A. Snow, painting, 7 days, at $3.00..	21.00	
		M. Burnett, horse barn and work on grounds, 12 days, at $2.00...........	24.00	
		T. W. Davis, work on horse barn, 1 day, at $2.50	2.50	
				253.80
10-24	10027	Wm. Shivers, straw, forage department (14 tons, 1,355 pounds)		73.39
10-24	10028	W. Q. Stewart, advertising Calhoun county......		10.00
10-24	10029	Western Poultry Journal, advertising contract 1912		15.00
10-24	10030	Chicago Live Stock World, advertising contract 1912		28.00
10-24	10031	The Breeders Gazette, advertising contract 1912..		196.00
10-24	10032	R. S. Johnston, per diem and mileage auditing committee and expense attending Minnesota State Fair		51.85
10-24	10033	F. G. Haworth, advertising Tama county		15.00
10-24	10034	H. D. Rhine, advertising Mahaska county......		15.00
10-25	10035	A. Palmer, superintendent, return freight school exhibit		6.20
10-25	10036	J. O. Mitchell, cartage, school exhibits...........		2.00
10-25	10037	Bastian Bros., premium ribbons and badges 1912 fair		689.93
10-26	10038	Register & Leader Co., advertising for bids horse barn, house sale, and machinery hall, and agricultural building floors		46.47

10-26	10039	Register & Leader Co., miscellaneous printing...		270.50
10-26	10040	Register & Leader Co., miscellaneous engraving.		100.18
10-28	10041	Chas. Rhinehart, correction pay rolls, 1911-1912..		13.50
10-28	10042	W. C. Treloar, advertising Boone county........		15.00
10-28	10043	Joe McCoy, advertising Warren county..........		10.00
10-28	10044	A. R. Corey, Secy., forage, poultry and administration department		111.65
10-28	10045	Iowa State College, 2d payment one-half expense college exhibit		286.83
10-28	10046	E. M. Wentworth, Supt., correction pay roll, police department		31.00
10-28	10047	Backman Sheet Metal Works, metal work (grounds)		578.26
10-28	10048	Sieck Tent & Awning Co., rent tents, cots, etc., 1912		561.29
10-28	10049	Iowa Pipe & Tile Co., pipe and tile..............		367.32
10-28	10050	Iowa Telephone Co., exchange service and toll bills, March to October		66.15
10-31	10051	C. A. Nash, salary October, 1912.................		125.00
10-31	10052	J. H. Deemer, salary October, 1912..............		100.00
10-31	10053	Edith K. Smith, additional salary October, 1912...		10.00
10-31	10054	Minnie Anderson, extra clerk October, 1912......		65.00
10-31	10055	Janette Murphy, expense dog show		14.50
10-31	10056	L. C. Perkins, expense dog show, superintendent.		87.81
10-31	10057	O'Donnell Prtg. Co., printing premium list dog show		251.50
10-31	10058	Field & Fancy, advertising dog show...........		8.00
10-31	10059	Delavan Lake Kennel Club, advertising dog show		10.00
10-31	10060	Des Moines Duplicating Co., expense dog show, multigraph letters		5.80
10-31	10061	Ben J. Ness, sheriff, deposit on additional land, Brown property condemned		500.04
11- 7	10062	A. R. Corey, Secy., pay roll No. 26 (grounds): October 20-November 2, inclusive.		
		H. P. Stouffer, labor on grounds, 1 day at $3.00 ....$	3.00	
		M. Burnett, labor on grounds, 2 days, at $3.00	6.00	
		Henry Grandgeorge, labor on grounds, 10 days, 3 hours, at $2.50............	25.75	
		I. J. Whitmer, labor on grounds, 12 days, at $2.00	24.00	
		Chas. Brennan, labor on grounds, 6 days, at $2.00	12.00	
		Geo. Whitney, foreman, 11 days, at $2.25	24.75	
		E. A. Snow, labor on grounds and painting, 3½ days, at $3.00.........	10.50	
		Theo. Broerman, painting, 3 days, at $1.75	5.25	

		John Olson, labor on grounds, 5 days, at $2.00	10.00	
		A. W. Weihn, labor on grounds, 12 days, at $2.00	24.00	
		I. B. Brown, labor on grounds, 9 days, at $4.00	36.00	
		Rudolph Illgan, labor on grounds, 9½ days, at $2.00	19.00	
		Caleb Johns, labor on streets, 8½ days, at $4.00	34.00	
				234.25
11- 7	10063	H. B. Baker, advertising Wapello county		12.00
11-13	10064	C. E. Cameron, per diem and mileage, executive committee meeting and expense Chicago rate hearing		49.58
11-14	10065	W. S. Corsa, refund special premiums for 1912		65.00
11-14	10066	McLaughlin Bros., refund special premiums for 1912		100.00
11-14	10067	H. G. McMillan & Son, refund special premiums for 1912		70.00
11-14	10068	Henry Lefebure, refund special premiums for 1912		30.00
11-14	10069	American Assn. Fairs and Exposition, dues 1912		25.00
11-15	10070	Iowa Stone Co., 2 doors new horse barns		195.40
11-15	10071	Des Moines Water Co., water bill October, 1912		5.06
11-15	10072	Fairbanks-Morse Co., repairing scales		5.25
11-15	10073	McCray Sign Shop, miscellaneous signs		101.50
11-15	10074	Inter-State Realty Co., commission for purchasing additional land		932.60
11-15	10075	Inter-State Realty Co., balance on additional land and expense		160.35
11-15	10076	J. H. Queal & Co., 2d payment lumber bill, 1912		632.87
11-15	10077	G. S. Gilbertson, treasurer's salary, 1912		100.00
11-18	10078	A. R. Corey, Secy., pay roll No. 27 (grounds): November 4-16, inclusive.		
		H. P. Stouffer, grounds, 2 days, at $3.00	$6.00	
		E. A. Snow, grounds, 2 days, at $3.00	6.00	
		H. Grandgeorge, walks and grounds, 2 days, at $3.50	5.00	
		I. J. Whitmer, walks and grounds, 2 days, at $2.00	4.00	
		A. W. Wiehn, hauling manure and work on grounds, 12 days, at $2.00	24.00	
		Rudolph Illgan, labor on grounds, 4 days, at $2.00	8.00	
		Geo. Whitney, foreman, 4 days, at $2.25	9.00	
				62.00
11-19	10079	Walker News, advertising 1912 fair		1.44
11-19	10080	Iowa Telephone Co., toll bills, Ames station		.25
11-23	10081	C. E. Cameron, per diem and mileage, executive committee meeting		26.00

11-26	10082	J. E. Lovejoy, payment on new horse barn	1,500.00
11-26	10083	A. R. Corey, expense attending Chicago rate hearing	24.75
11-26	10084	A. R. Corey, expense recording deeds	2.35
11-26	10085	O. A. Olson, per diem and mileage, executive committee meeting	27.50
11-27	10086	J. E. Lovejoy, payment on new horse barns	500.00
11-29	10087	C. A. Nash, salary November, 1912	125.00
11-29	10088	J. H. Deemer, salary November, 1912	100.00
11-29	10089	Edith K. Smith, additional salary November, 1912	10.00
11-29	10090	Minnie Andersen, salary November, 1912	65.00
11-29	10091	C. J. Martin, judge Angus cattle, 1912	50.00
		Total	$167,563.24
		Premiums paid by premium warrants No. 9625 to No. 10606 inclusive	58,139.15
		Grand total disbursements	$225,702.39


HILDEBRAND

Boys Camp at the 1912 Iowa State Fair.

BOYS' CAMP.

Mr. Hansen, Superintendent of the Iowa State Fair Boys' Camp, then read his report as follows:

To the State Board of Agriculture:

Your boys' camp superintendent counted it a great privilege to have charge of your first state fair boys' camp. While there are many other important features of the state fair I doubt if there is any feature so fundamentally important as that of being helpful to the young people of the state. They are the ones upon whom the future success of this great commonwealth must depend, and furthermore, not only will economic success depend upon them but the future happiness of the homes of this state will depend upon the kind of boys we are raising now. I consider the idea of a camp at the state fair an excellent one.

It was planned by your committee to have one boy from each county in the state, this boy to be chosen by an essay writing contest in that county and these essays to be judged by a committee made up of the county superintendent of schools, the secretary of the fair and the secretary of the farmers' institute. In most cases this local committee took an interest in the proposition but quite a number made no move to have their county represented. We must consider, of course, that this was the first year and we had a reputation to establish in so far as the camp was concerned. Nevertheless eighty-four of the ninety-nine counties sent representatives leaving but fifteen without representatives. With but one or two exceptions the boys were of the very highest grade and after much boys' camp experience I am willing to say that it was the finest group of boys I have ever seen together for a camp. I do not think that the plan your committee had in securing representation was at fault for not securing a representative from each county in the state but that it was a local lack of interest. I doubt if there will be any trouble next year in securing the full number of boys and I also judge that competition will be much keener in all the counties.

We were assisted in the management of the camp by a competent group of adult leaders, which is an essential thing in the management of any boys' camp. Three of the county Y. M. C. A. secretaries of the state, namely, C. E. Atkinson of Rockwell City, J. T. Smith of Sac City, and J. H. Abernathy of Jefferson, were present. Ralph Fletcher, an older high school boy of Mason City, came as the official camp bugler and also to help in camp leadership. Messrs. Dunlop, Cave, and Taff of Ames helped for part time. These men worked faithfully to promote good fellowship and to see that the boys got the most out of it and last but not least that the boys did the work of ushering, ticket taking, etc., in good shape. I doubt if there were many men on the fair grounds who worked harder during these days than the men who broke in a green set of country boys to handle the immense crowd in the grand stand and in the stock pavilion. It was indeed no small task but it was certainly an education for the boys.

The schedule for the day was somewhat as follows:

5:00 A. M.	Rising bugle.
5:15-7:15	Helping in the morning round-up.
7:15	Breakfast.
7:45	Assembly followed by a talk either on things relating to agriculture or things relating to character making, integrity, etc.
8:45	Inspection of exhibits, class in rope tying and other educational features.
10:00-11:00	Leisure.
11:00	Dinner.
12:00	One division reported at the grand stand to usher for the afternoon and the other division was free for educational trips and to go about the grounds.
5:00 P. M.	Supper.
6:00	One-half of the boys reported at the grand stand for ushering again and the other half at the stock pavilion for ushering.
10:30-11:00	To bed.

You will note that there was not much time for play when this schedule was carried out, which it was practically every day we were there.

I feel quite sure that the fair board was repaid many times over as far as expense is concerned because of the work which the boys did. The main part of the work was, of course, the ushering in the grand stand and stock pavilion and helping in the morning round-up. I do not know what your ushering has been in the past but I heard expressions like these: "The most courteous ushers we have ever seen at the state fair," "The best ushers we have ever seen at the state fair." There were other things which the boys did beside those here mentioned which included the following: Guiding people about the grounds, giving information, helping get things in shape at the baby show, running errands, and leading stock in the stock parade. They were indeed a very willing group of boys when it came to work. On the first day they were there I sent them out to become acquainted with the grounds and to report back to me what they had seen. They were therefore familiar with the grounds from the start. I consider the work that they did valuable not only to the fair board but of value to the boys themselves. It was educational for boys to help handle such crowds as came to the grand stand on the big days of the fair.

With the strenuous schedule which we had it was not possible to put in quite as much time on educational features as I had hoped. With the help, however, of men from the Ames extension department we sent out almost daily groups to inspect the exhibits under their supervision. We held rope class in camp several days. We had such speakers as "Uncle" Asa Turner, Mrs. B. F. Carroll, State Secretaries of the Y. M. C. A. Paulson and Aldrich, Messrs. Olson, Cameron, Reeves, Corey, and Curtiss of your board as speakers. We also laid emphasis upon the boys entering the judging contest and more than forty of them did, two of these boys winning scholarships in the contest. I have read some of the essays which were sent in and I think the men who have read them will agree with me that the boys who wrote essays at least knew pretty well what was at the state fair. We placed emphasis continually on spending what spare time they had on inspecting exhibits and this I think the boys did in good shape whether they were under the guidance of instructors or not.

The fellowship, good time and friendship which a camp like this can promote is not an unimportant part of such ventures. We tried through a daily camp newspaper, through games, and through emphasis upon getting acquainted with each other to make these features a part of the camp. I think that judging by what the boys said when they went home and from many letters which I have received since that they not only learned a lot of things but that the friendship and fellowship and the good time which they had will forever be a part of their lives. There was much talk among the boys of having an annual camp reunion at the fair and if we could start something like this the future attendance at the state fair ought to be insured for they would bring others with them each year and there would be an increasing number of boys who had been to the state fair if you make this a permanent institution.

I forgot to mention that we took several educational trips to the city under the guidance of leaders. All the boys had an opportunity to see the business part of town and to inspect the new Y. M. C. A building and all of them had the pleasure of going swimming in the splendid swimming pool of that building. Trips were also made to the capitol and other places of interest.

I have attached to this report a list of the names of the boys who attended the first camp with their addresses and the names of the county which they represented. I think that your first camp could be called a success. It was educational; it promoted fellowship and friendship among a splendid group of Iowa boys. I doubt not but that the characters of quite a number of the boys were influenced toward integrity and higher ideals. You ought to make it an annual affair.

Iowa State Fair Camp Delegates, August, 1912:

Floyd E. Hudson, Knoxville, Marion county; Mort Brooks, Forest City, Winnebago county; Asker T. Bergo, Northwood, Worth county; Cleon B. Siverly, Diagonal, Ringgold county; John W. Hazlitt, Tripoli, Bremer county; Erwin Larson, Forest City, Hancock county; John Cody, Cylinder, Palo Alto county; Ed. Knotek, Washington, Washington county; Wm. H. Ashby, Lucas, Lucas county; Rudolph Evans, Decorah, Winneshiek county; Forest H. Ford, Tipton, Cedar county; Wayne Kaugman, Whitten, Grundy county; Ralph Woodard, Webster City, Webster county; Wm. L. Logan, Hillsboro, Lee county; Howard McCormick, Sumner, Fayette county; Ralph Winsler, Moravia, Appanoose county; Guy Peterson, Cherokee, Cherokee county; Robert Spargus, Council Bluffs, Mills county; Donald F. Willcox, Melvin, Osceola county; Daniel Holcomb, Doud, Van Buren county; Ralph A. Fritz, Atlantic, Cass county; Boyd E. Metier, Weldon, Decatur county; Raymond Teachout, Shenandoah, Fremont county; Wilber Finn, Shenandoah, Page county; Harlan Link, Waukon, Allamakee county; Santford Bryson, Mason City, Cerro Gordo county; Herluf Hansen, Elk Horn, Audubon county; Isaac C. Henderson, Paulline, O'Brien county; Orlo Drennan, Corning, Adams county; Claude Burns, Minburn, Dallas county; Lowell Johnson, Cresco, Howard county; William Walsh, Zwingle, Dubuque county; Leo Walker, Corydon, Wayne county; Fred Tennyson, Dudley, Wapello county; William Anderson, St. Charles, Madison county; Dolph Lain, Bloomfield, Davis county; Loren E. McClure, St. Charles, Warren county; Llewellyn Smith, Keystone, Benton county; John Hendrick, Osceola, Clark county; Earle Heaton, Elberon, Tama county; Ernest Cherry, Walker, Linn county; Howard Mawdsley, Burt, Kossuth county; Francis Mohler, Bedford, Taylor county; Eugene Colony, North Liberty, Johnson county; Gale McClean, Wilton Junction, Muscatine county; John L. Chew, Adair, Adair county; Lloyd Riley, Norway, Iowa county; Merrill Drury, Early, Sac county; Irving Moe, Montgomery, Dickinson county; Donald Ginger, Langdon, Clay county; Albert Hansen, Alta, Buena Vista county; Lewis Smith, Dunlap, Harrison county; Homer Pattison, Le Mars, Plymouth county; Harry H. Rensink, Boyden, Sioux county; Dale Dunlap, Sigourney, Keokuk county; Dean Finch, Ida Grove, Ida county; Chester Richards, Gruver, Emmet county; Clyde Naylor, Stratford, Hamilton county; Hayes W. Parsons, Fairfield, Jefferson county; Ralph Harper, Nevada, Story county; William H. Stacy, Osage, Mitchell county; Lester Day, Waterloo, Black Hawk county; Earl Winslow, Marshalltown, Marshall county; Ellis D. Willis, Steamboat Rock, Hardin county; Thorwald Sahl, Harlan, Shelby county; Hugh Williams, Danville, Des Moines county; Harry Welsch, Elliott, Montgomery county; George Wall, Burdette, Franklin county; Clifford Mason, Melrose, Monroe county; Ray Menzel, Hazelton, Buchanan county; Meron Axtell, Strawberry Point, Clayton county; Leo Ahart, Dow City, Crawford county; Clemons Ullrich, Mapleton, Monona county; Otis Dickey, Redfield, Guthrie county; Emslie Hutcheon, Jefferson, Greene county; Arthur Oppedahl, Goldfield, Humboldt county; Earl Benton, Rockwell City, Calhoun county; Ivan Akers, Laurel, Jasper county; Eugene E. Hayenga, George, Lyon county; Ralph Perkins, Rose Hill, Mahaska county; Henry F. Mammen, McClelland, Pottawattamie county; Arthur Marshall, Battle Creek, Woodbury county; John Day, Afton, Union county; Theo. Abkes, Austinville, Butler county.

Leaders of the camp:

Fred M. Hansen, Des Moines, superintendent; O. E. Atkinson, Rockwell City; J. T. Smith, Sac City; J. H. Abernathy, Jefferson; Ralph Fletcher, Mason City.

The president then introduced Mrs. Mary T. Watts, Audubon, Iowa, who spoke on the Babies' Health Contest.

BABIES' HEALTH CONTEST.

Report and benefits of Babies' Health Contest, Iowa State Fair, by Mary T. Watts, Audubon, Iowa, Superintendent of contest.

One day, several years ago, I attended our county fair. I stood at the booth of which I was superintendent listening to the talk that drifted in snatches of prizes won on pigs, sheep and cattle—the same talk I had heard at every fair for ten years. Suddenly I became conscious of how often I had heard this talk of the wonderful improvement that had really been made in the condition of live stock in that length of time. Just at that moment a woman with a fretful baby in her arms stopped near to me to rest. A child of about three years clung to her skirts with one hand and with the other fed herself with a large under ripe banana. Three other children, brother and sisters, clambered about in imminent danger of broken necks and tramped toes. One might label the picture I thought, "An average family on a holiday." As I looked back I saw myself and my brothers and sisters forty years ago, no better—no worse. Measles, mumps and whooping cough would be a part of these children's lives as it has been of mine. If they lived through these necessary evils, without too great loss of vitality, they might grow to manhood and womanhood. Then I began to think that this family would probably mean more families of the same kind—possibly with less endurance. A friend interrupted my thoughts to invite me to go to the stock barns with her where the premiums had just been awarded. Blue ribbons and red ribbons showed bravely on the stalls. Every animal in the clean, well-ordered cattle and hog pens had been fed, and groomed with the utmost care. A man pointed with pride to a pen of hogs, and told us that they had been watched almost night and day; that the water they drank had been analyzed, their food measured and weighed and only the kinds given them that would bring results. It was then that the idea of the babies' health contest for our near state fair was born. If scientific care and common sense had done this for animals then the same happy combination could do wonders for the human animals, was the summary of my deductions, and thus I hit upon the fundamental principles of eugenics and won the endorsement and co-operation of the medical men and women of the nation.

We Iowans have long judged our corn, our hogs and our cattle by scientific standards to find the most perfect specimens and encouraged better corn growing and better stock raising—isn't it about time that we gave at least equal attention to our greatest product, our babies?

From this idea came the first babies' health contest, which was held at the Iowa state fair, August 28, 1911, under the auspices of the Iowa congress of mothers and the extension department of the state agricultural college.

The initial contest proved so successful and aroused such interest in child study among fathers and mothers, that the management of the fair voted unanimously to make the babies' health contest a regular department of the Iowa state fair, and appropriated $500 for prizes and equipment for the contest for 1912.

Expert assistance, better equipment and experience gained from previous efforts made the second state fair contest an even greater success than the first, and made the committee in charge more certain of the value of the contest idea as a public educator.

Almost every day since the first contest was held, letters of inquiry have been received asking information concerning plans for conducting similar contests. Many "babies' health" contests have been held in Iowa the past year and more are planned for the future. Other states have been attracted by its possibilities and contests have been made a leading feature of their state fairs, household exhibits and chautauquas.

In this new kind of a baby show pretty dresses and blue ribbons do not count, for they are piled in a dainty heap on a chair and the babe goes before his physical judges, as naked as the day he was born.

Kicking and crowing he is taken from his mother's arms, and laid gently on the measuring board. While one of the physicians presses firmly on his knees to straighten his limbs, another adjusts the gauge that gives his exact height in fractions of an inch. Then he is set up, his feet are braced against a standard and he is encouraged to pull with all his muscles taut. While this is going on a quick eyed judge notes color and condition of skin, and another gives him proper credit for muscular development.

A few moments later the baby finds himself deposited in the pan of a pair of scales and as he feels himself dropping into space as the strong hands of the physician release him, he lets out a lusty yell of surprise. The mother, anxiously watching every move, jumps from her seat in alarm, but settles back contentedly as a smile goes from judge to judge and word is passed along to mark his honor up for a good pair of lungs.

The findings of the judges are written on a score card, similar to those used in judging stock, in fact Dr. Margaret Clark, of Waterloo, Iowa, used a live stock scoring card as a model, making of course, necessary changes to meet the requirements of the human body.

One of the most interesting facts brought out by the initial babies' health contest was that Charles Elmer O'Toole, who won first prize at the first state fair contest, scoring 96½ points, was a delicate child for the first six months of his life.

Careful diet, fresh air and regular hours for sleep and exercise had made his physique at three years, so perfect, that the examining physicians could find no flaws, but marked down a little, because they believed there could scarcely be absolute perfection in a child. Charles Elmer O'Toole's perfect points were: Weight, 35 pounds, height, 35 inches, chest, 35 inches, head, 19¼ inches—cephalic index.

Babies who are born with normal health and bodies have a great advantage in life. There is no better way to make parents think than to set down in black and white their child's defects.

The Convention then adjourned until 1:30 p. m.

THE PRESIDENT: The first address this afternoon on the program affords me the pleasure of presenting for the first time to this body, Dr. R. A. Pearson, who has recently been elected President of the Iowa State College.

ADDRESS.

DR. R. A. PEARSON.

Mr. President and Gentlemen: I came into the state of Iowa with the belief that any man is fortunate who is permitted to live and work in this state and I am still holding to that opinion. I have discovered in the short time I have been here that when the state board of education invited me to accept the position of president of the Iowa State College of Agriculture and Mechanic Arts, they did not call me to a position such as is generally or popularly known as an easy job. I have found that there is a great deal of important work requiring my attention at Ames, and I have resolved that for some time to come I shall stay as close to that work as I can in order that I may learn the institution, and after that I expect to learn as much about the state as I can.

I came here from one of the eastern states which has with others contributed a great deal toward the growth of this whole middle western country, and I have been frequently reminded of that fact by meeting men who have gone out of their way to tell me that they came to the state of Iowa from one or another of the of the counties of New York state, and frequently have asked me if I knew where they used to live and the people in those localities. I want to say for the satisfaction of those persons, and for others, and I believe that will include all who are interested in the welfare of the eastern states, that those states made a notable sacrifice for the good of this middle western country many years ago which has never been fully appreciated, but it was made cheerfully and ungrudgingly by the eastern states. About the time that Iowa and Illinois and other states in this neighborhood were being first settled, agriculture in the east was comparatively prosperous, but when this wonderful country was opened up to settlement with its great stretches of fertility which could be obtained, most of it, on very easy terms, many of the brightest and best of the eastern farmers and eastern people moved away from their homes and came here to establish new homes, and the result was there was less interest in farming in the east. Farm values went down, and you who came here from the east and elsewhere soon began to pile up enormous crops to be shipped to the eastern market, and the shipment of those crops required large railroad facilities, and the eastern farmers were called upon to furnish men to operate them. These different conditions served to decrease the demand for land in the east, with the result that values went tumbling. Literally hundreds of millions of dollars represented the decrease in farm values in those eastern states in only a few years' time. I do not believe that in the entire history of our country there has been a larger sacrifice made in a commercial way on the part of one section of the country for the benefit of another section of the country nor one more cheerfully made than that which has been referred to and I know the people in the west will be glad to hear that now a period of prosperity seems to be returning to those same eastern farms For example, in New York state values of farm lands in the last decade increased thirty-five per cent, which is a very distinct and encouraging increase, not like the increase you saw in this state where values jumped about one hundred per cent in the same period.

I think it would be unwise for me to attempt to discuss problems which are peculiar to the state of Iowa for the simple reason that while I am using every way I can to learn those problems, yet I am not far enough advanced in my lessons, so I feel free to discuss them. I want to say a few words about two phases of your agriculture which are more or less alike in all states, and especially prominent in the state I have been residing in in recent years.

In the first place, let me bring to your attention the change of attitude of the public at large toward agricultural education, and I may say that in Iowa we have a great agricultural college. I can say this with all modesty, for I have had nothing to do with the making of the agricultural college. We have a college which is well manned, which stands high not only in this state but carries a splendid reputation throughout other states, and even in foreign countries, and I esteem it a very high honor to be asked to become connected with such an institution as the one at Ames. In 1862, just fifty years ago, Senator Morrill of Vermont introduced and secured the passage in congress of a bill to provide education in all the states along the lines of agriculture and mechanic arts. Senator Morrill was taking a long look into the future. People did not appreciate that education, especially education of college grade, was even desirable in connection with either agriculture or mechanic arts. Senator Morrill was considering the great increase of population which he felt sure this country would see. He doubtless had taken occasion to familiarize himself with conditions in European countries where problems that we would have to meet had been already met and to a large extent solved. He saw that both agriculture and engineering in those countries were being promoted in a very necessary and vital way through the aid of institutions of higher learning, and so in 1862, in the hour of great agony in this country's history, that measure was put upon the statute books which established colleges of agriculture and engineering in all of the states.

The senator believed that those two great industries have an important bearing one upon another, that each one to a large extent is dependent upon the other, and the tendencies and the history of the times have proven that he was entirely correct. These industries and these kinds of institutions must go hand in hand to bring about the very best results. But the people at large did not appreciate the need of instruction in agriculture as readily as that in engineering and years went by and the agricultural colleges were not attended by many students. In 1892, it happened that I came in personal contact with this line of work as a student in a college of agriculture, and I recall in that time there was but a handful of students studying agriculture, and there was an enormous number of students in that same university studying mechanic arts or engineering. Some persons who got their information in those times and have not carefully observed the progress of the present time, believe the attractions in engineering are now so great that young men cannot be expected to stay and study agriculture where engineering is taught, for the reason that the engineering would attract them out of agriculture. This is a mistaken judgment.

The reason why engineering courses fifteen or twenty years ago were attracting the students that they did attract, was simply the fact that manufacturing and industrial activities in this country were experiencing an unprecedented growth, and there was a great demand for trained men in engineering. Now, twenty years later, in 1912, it is found in these same institutions that there is a great demand for instruction in agriculture. Students are coming from all directions and registering in the course in agriculture, and many of the larger and more prominent of the institutions, including the one at Ames, have more students in agriculture than they have in engineering, in fact nothing could better show the change of public opinion in respect to education along these technical lines, nothing could better prove the wisdom of Senator Morrill in establishing these colleges, than the situation in the present day. The attitude of the public toward agriculture is justified by the performance of the men who are going out from the institutions. I recall how one man's attitude toward a college education was abruptly changed. He had a son who was anxious to study agriculture, and he discouraged that young man from going to college, but the young man went in spite of his father's advice, and when he came home from school for vacation, his father laughed sarcastically at the book learning in the college and asked if he thought he would be a better farmer. The fact is the father himself had had a college education. but for some reason he had never learned to appreciate its value. Finally this young man came home after graduation, brought his diploma with him, and as a last bit of sarcasm his father said, "Well, you are back from college, and you have graduated, and got your diploma, have you, and I declare you look just like a fool." Just then a neighbor who had lived near by all the boy's life stepped in. He was glad to see John home, and to welcome John. "Well," said he, "I am glad to see you again. Well, well, you have finished your college course, and I declare you look just like your father did when he came back from college." (Laughter.) The father at once took a different view towards college education.

Let me tell you that higher education in agriculture is being justified by the performance of the men who are fortunate enough to have this education, just as clearly, just as emphatically, as higher education is being justified along any line.

I recall one young man who left a poor farm in the east—of course it could not be in Iowa if it was a poor farm—he left a poor farm to go to college, and after he finished his work he returned to the farm, and set about to see how best he could apply what he had learned, and on that farm they were raising oats at the rate of about forty-five bushels to the acre. It was the best they were ever able to do, and he applied what he had learned to the oat crop. He set to work to improve those oats by improving the seed, and in a few years he had raised the average yield of forty-five to seventy-eight bushels on the same land, and in that section that young man justified higher education in agriculture.

I recall another who went back to his farm where there was a dairy herd which had not been a very profitable enterprise, and he set about improving these animals by better breeding, better selection, and finding a better market for the product, and the result was, in spite of the advice of those who thought they knew better than he, that he succeeded not only in doubling but trebling the milk yield of these cows. And so he justified what he learned in college.

Then only a few days ago I had the pleasure of meeting another who had studied, among other subjects in his course, agricultural chemistry, and he went into a section where there was a great expanse of waste land. It never had been good for anything, and the people said it never would be good for anything. But with his skill he discovered that this waste land contained an excessively large amount of a certain constituent which was due to its volcanic origin and that constituent, manganese, had thrown the soil solution out of balance, and the question was how it could be adjusted. After making a number of experiments on the soil, he found that by adding to the land four hundred pounds of a certain combination of artificial fertilizer which had never been used before, he was able to make the land just as productive as any fertile land in that section. And today as a result of that application of his knowledge there is thrown into use in that section ten thousand acres of additional land, and so he in his district has justified higher education in agriculture.

At this time the entire public is greatly interested in developing agricultural education. We hear of bankers' associations, commercial bodies, railroads and others, taking up the question, and we say, of course, they are interested in the increasing of agricultural crops because an increase of the crops means an increase of their profits, and I think that is a creditable interest, but I believe that the chief interest actuating these men is the increasing cost of living, and the fact that they are large employers of labor, and they wish to avoid having their laborers coming to them repeatedly year after year for more and more wages, based on the ground of the increasing cost of living. Who would have thought that the public would come to that point of view a few years ago, yet today they believe in supporting agricultural education, and they are proving their belief by their acts in making appropriations for its support.

I believe that in Iowa, if any state, the people who live on the farms, and who are interested in farming, are familiar with the different activities of the agricultural college, and I will not tire you by reviewing them, but I wish to refer to just one of the new departures which I think promises great things, not only for this state but for other states, where it is being introduced. I refer to the plan of having in different counties experts permanently stationed for the purpose of giving advice upon the problems in those counties. In co-operation with the federal department of agriculture, your college of agriculture at Ames will soon be engaged in that kind of work in Iowa to a large extent. Already a number of counties have been organized. Dean Curtiss is in correspondence with quite a number of others. Heretofore our work has been largely of a temporary character, so far as work in different districts was concerned. Short courses and institutes have been held at different points for a short time and then the experts passed on to other places. Now the plan is to continue these efforts, but at the same time have an expert in the county who will assist in the introduction of improvements which are being taught, and the underlying idea of all this is to enable the farmer not alone to produce larger crops, but to produce crops more economically. That is the way the farmers' profits are going to be increased. We hear a good deal about farmers being rich. If they are they certainly deserve it. Not long ago I took occasion to study this question in another state. I found that during a period of about twenty years the prices for which the farmers were selling some of their products had increased about one hundred per cent. The prices of other products increased something like twenty per cent during the same period. Many people will say farmers must be getting rich. They are getting one hundred per cent more for their products than they did twenty years ago. But that is not necessarily proof that they are getting rich. Further search shows that these farmers are paying more for a large amount of supplies, including labor, than they were paying ten years ago. As to increase of farm prices one hundred per cent, I want to call your attention to the fact that comparison is based upon prices twenty years ago, which literally may be called impossible prices. The prices of farm products twenty years ago did not begin to represent the value of the labor put into those farm products, plus the value of the fertility they were removing from the soil, and the reason that farms in some great sections of the country, and especially of this state, were believed to be prosperous, if they were truly prosperous, with such prices as obtained twenty years ago, the reason for it was they had a great bank account in their soil, and they drew on the principal of that bank account and sold it by the carload. It is not fair to compare prices of farm products with other products over the same period, because at the beginning of that period of twenty years, farm prices were on an impossible basis, and manufacturing prices were on a self-supporting basis.

I believe that this county expert plan which is coming into vogue in the different states, promises great things. I believe that the time is going to come when there will not only be a county expert, but there will be town experts, and smaller groups of farms in turn will have their own experts. I so believe because I know of farmers in some sections that have gone down into their pockets and employed an expert to come and live in their midst and give his entire time to the problems upon their farms, because they find it is profitable to do that thing. I remember of a farmer speaking of a farmers' institute. He said, "You don't think I could go, do you, my neighbors would think I did not know how to farm." That attitude of mind is rapidly passing away. The fact is we do not know how to farm, and many of the experts do not know all about it, but we are all anxious to learn one from another, and the expert is just a man who is qualified to give advice to the practical man who is obliged to devote all his time to the detail routine work of the farm.

I want to refer in a few words to one of the problems which I know has attracted a good deal of attention in Iowa, and is attracting much attention in other states, and it has been discussed a thousand times, and that is "Decrease of Rural Population." So far as I can see this problem in this and other states there are three outstanding reasons why farmers will leave a state and go to some distant place where they think they will find better conditions for working and for living. They believe they can make more money, and believe they will find better school facilities, and they believe they will find better social facilities. I do not know to what extent these reasons are justified, but I do know well that whether the reasons are justified or not, as long as they exist in men's minds they will cause those men to pick up and move away, and you could not stop them from going even if you should build a Chinese wall around a state. They are going to go. So, Mr. President, I believe that it puts upon this agricultural state—upon the agricultural society of the state and the agricultural college great responsibilities. I think that we should exert ourselves to the utmost to ascertain the true facts. Is it true that a man can do better in a financial way by leaving a farm in Iowa and working upon a farm in any other distant place? We can think of instances where one has gained by moving. That is to be expected. But I believe—this is only my personal opinion—I believe that the large majority of those who go out of this state into distant Canada, go to worse conditions than those which they leave behind them. I remember meeting one of these men not long ago. He had gone out of New York state to Canada and got a farm there, and he had gone in high hopes that he would be able to make himself rich in a very short time. He spent just one year in the new country and then he came back again, and on a visit to me he said he had enough of it. He said, "In a few months more there will be another crop of suckers go out there," and then he would sell his farm, and move back to the place that he came from.

It is possible some go to some other land because it is cheaper, and because they find it is difficult in a state that is well settled like this, and the other states of the east, they find it is difficult to get money for the purpose of buying and equipping their farm. If that is the case, should not we carefully consider some method by which funds can be loaned to deserving persons? Very briefly, I want to tell you what is done in Germany along these lines. There a man who is deemed worthy of the assistance is able to borrow a sum of money for the purpose of purchasing land, or to improve his farm, on a basis which permits him to pay that loan in the form of annual interest payments. The loans are so well secured that they are made at a very low interest, two to three per cent. There is added to that perhaps one and one-half or two per cent as annual payment on the principal, and each year after the loan has been made, the borrower pays a total of five per cent or less, which covers both the interest on the sum which he has borrowed, and it provides also a payment on the principal which he must repay, with the result that after that mortgage has been running for forty or fifty, even sixty or seventy years, with those low annual interest charges the entire obligation is paid off. This makes it easy for worthy men to secure funds on long time loans, sure that they will not be called upon to make payment at any time when they may not be able to do so. The result of this is that men who are of the right class and the right type are being attracted into farming.

I think, Mr. Chairman, that the true causes for the departure of worthy citizens from this state are not thoroughly understood, and I think that they should be made a subject of special study. I think there is no better way to do this than by a special commission which should be formed to take the matter up somewhat along the lines of the rural life commission of which Mr. Henry Wallace of this city was a member. They traveled over the whole United States looking into problems relating to the welfare of the farmers. I believe if it is not otherwise provided for, some such commission study as that might well be undertaken in this state.

Perhaps I ought to mention the state fair. I do not know whether Secretary Corey expects me to say anything about the state fair or not, but I shall pass that over with the remark that for me to come here and discuss the state fair, would be like carrying coals to Newcastle. I believe it is one of the institutions of this state which is serving the state well. Its reputation extends far beyond the borders of this state, and you probably all know it is one of the greatest institutions of its kind in the whole world, and many persons not living in Iowa know the same thing.

Let me say in closing, that one of the finest things I have found in the state of Iowa, is the splendid pride existing among the people of Iowa in their state and their institutions, and it is just that it should be so. Statistics show that this great state produces 432,000,000 bushels of corn; more than any other state. Illinois comes next with 428,000,000 bushels. Again, this state produced 220,000,000 bushels of oats; more than any other state. Illinois again taking the second position with 183,000,000 bushels of oats. And again, these same statistics for 1912 show that there is not only a large yield in Iowa, but still better they show the yield in Iowa per acre in each case exceeds that of practically all of the other states in the union, the corn yield being 43 bushels per acre as compared with Illinois' 40; and oats 44, as compared with 43 in Illinois. Now, I believe that such a creditable standing as these figures indicate will serve to give us an impulse to work to maintain the splendid position this state occupies. I want to remind you that it should serve to do this because other states are making strenuous efforts to overtake Iowa, and gain first position. On a ten years average we are obliged to admit that Illinois excels us in both corn and oats. In Illinois every effort that the state can command is being made to advance their agricultural interest, and increase the agricultural output, and to produce crops more economically and at a greater profit. Illinois is expending well towards a million dollars annually in agricultural instruction. There are a large number of organizations in that state that are striving, just as the organizations are in this, to advance all these interests, and so, Mr. President, I want to call your attention to the fact that we are to have worthy competitors for this first position in the agricultural world. I believe that with the splendid citizenship of the state, with the splendid organizations, and its institutions, that no state can take the first place from us, and so I am here to work with you and to help you to see that they do not take it away from Iowa.

The first prize essay, "What I Saw and Learned at the Iowa State Fair," by Forest H. Ford, Tipton, Iowa, was then read by Secretary Corey.

"*What I saw and learned at the Iowa State Fair and Exposition*":

A useful exposition of the resources of a state is a hard thing to secure and equally hard to maintain. Much credit is due the managers of the Iowa state fair for the degree in which they have reached success in both particulars. Taken all in all it was the best state fair which has ever been held in this, or any other state.

The real value of the state fair cannot be realized until one has visited it, for "seeing is believing."

In taking up the study of exhibits we find every class filled with the richest products from our Hawkeye state, as well as from many of our neighboring states.

One of the most interesting exhibits on the grounds was that of machinery. This was magnificent, both in magnitude and variety. Here we saw the best and could decide for ourselves what makes we liked best, and which would save the most labor. The manner in which gasoline and kerosene is displacing wood and coal as power, was evidenced by the large number of gas tractors and gasoline engines. Stave, panel, and block silos of various kinds; convenient and sanitary equipment for barns; cream separators and many other of the almost "one hundred and one" machines which the modern farmer requires had its place. From the time one landed from the street car, and all through the long circuit of the grounds, there was not a minute when the hum or whir of some machine making farming easier was not heard.

In visiting the horticultural exhibits, we found a large display of apples, plums, grapes and other Iowa fruits. Apples useful in the home orchard were present in great abundance, emphasizing the fact that Iowa farmers may supply their own table practically the year around with fruit raised right at home.

The exhibit of grain was large and the quality very good. Almost every kind of grain grown in Iowa was on exhibition and proved to be an interesting, as well as an educational exhibit. From every section of the state came stories of bountiful crops. The Iowa farmer certainly chanted the song of plenty at Des Moines on fair week.

Another interesting exhibit was that made by the pure food commission. A striking display was made of brilliantly colored candies, which owed their wonderful tints solely to injurious dyes.

The building of the "Iowa State College of Agriculture and Mechanic Arts" was the mecca of thousands of visitors to the fair, and because of the diversity of exhibits and the value of the instruction given, it was worth the interest it occasioned.

The exhibits covered a wide range, from soil maps of the state, showing the various drifts, to models of silos and lighting plants, noxious weeds, engineering appliances and hog cholera preventive. On the piazza of this building was a display made by the church and country life department of the Presbyterian board of Home Missions. The exhibit consisted chiefly of placards which bore statistics calling attention to the dying of church life in many places.

The entries in the live stock department were of a universally high order, of good quality and attracted praise from thousands upon thousands of visitors.

"In all that is good Iowa affords the best," for Iowa breeders are fast becoming prize winners at the state fair, winning the honors over breeders from other states, a matter over which the state may, with all due humility, take great pride. Some idea of the value of the stock on exhibition may be had from the estimate the fair association put on the prize winning horses and cattle, in the grand parade on Friday which they advertised as a million dollar parade. All the prominent breeds of live stock were on exhibition, being exhibited by the most eminent breeders of our state and of neighboring states.

The display of poultry was large. Every popular breed of chickens, ducks, geese and turkeys were on exhibition. The stern voice of the chanticleer could be heard from early morn until sunset, announcing from his neat little coop that he had taken first prize.

Along the line of amusements some very interesting events took place. Alfred, the monkey, and the trained bears afforded fun and amusement for both old and young. Among the most interesting amusements were the daily flights of the flying machines, along with the "Wild West Show." Each evening a marvelous display of fireworks was given in front of the amphitheater.

It is now that I can realize the value of the "State Fair" and can appreciate the many lessons I have learned. In briefly summing up the latter I find the fair teaches us that pure bred stock is the best, and that it is a loss to raise inferior stock. It teaches one to be a better farmer, to practice better farming and to raise the best of everything. The state fair gives a person a chance to meet new friends and to make dealings with men face to face, instead of by correspondence. The idea of the old European trading bazaar is coming back to the people and is well illustrated at the state fair where both buyer and seller are brought together. The fair leads to a better understanding of all the different parts of the state as to farm products, and opportunities. Much valuable knowledge is gained that will show up some time in an increased bank account.

In closing I want to heartily thank the state fair association for making possible the "boys' camp" and "stock judging contest," from which I have obtained a great deal of useful knowledge which will cling to me all through my life.

May the state fair forever be and each year realize a greatness more lofty and a grandeur more enduring.

> "Yonder clouds are yet but lined with silver; another hour will reveal them; scarlet, yellow, and gold; mountains of heavenly glory banked up against the sky."

Here followed the address of Dr. Geo. M. Chappel, Director of the Iowa Weather and Crop Service.

IOWA CROPS—FINAL REPORT.

Final Report For The State—Total Yield of Soil Products—Value at Farm Price, December 1, 1912.

Following is a summary of reports from crop correspondents of the Iowa weather and crop service, showing the average yield per acre and total yield of staple soil products, and the average price at the farms or nearest stations, December 1, 1912:

As a whole, the crop season of 1912 was the most productive one in the history of Iowa. The total yield of corn, oats and winter wheat was far in excess of any previous year, and all other crops, except apples, were nearly up to the maximum of production. Notwithstanding the fact that the average price of soil products is much below the prices prevailing on December 1, 1911, the total value of this year's crop exceeds that of last year by over $3,000,000, and if good seed corn had been used last spring an additional $10,000,000 could have been added to the value of this year's crop.

Corn.—The revised estimate of the acreage of corn is 9,199,610 acres, or 336,286 acres more than was planted last year, as shown by the report of the township assessors. The average yield per acre for the state this year is 45.8 bushels, making a total yield of 421,368,400 bushels, or 33,019,480 bushels more than was ever before produced in the state in one year; the next largest yield being 388,348,920 bushels in 1906. The average farm price on December 1st was 36 cents per bushel, making the aggregate value $151,698,624. Last year the estimated yield was 32.9 bushels per acre, aggregate yield 281,366,600 bushels; average farm price was 54 cents per bushel, making the aggregate value $151,937,964 or $239,340 more than the value of this year's crop. Fully one third of this year's crop is either soft or chaffy, due to the fact that much of the crop was not fully matured when the severe killing frosts, and in many sections of the state, freezing temperatures, occurred between the 26th and 29th of September. The weather has, however, been generally favorable since October 11th, and husking is now completed in many localities and will be practically completed within the next week.

Oats.—The area harvested was 4,665,100 acres; average yield, 44.4 bushels per acre; total yield, 206,949,700 bushels; aggregate value at 27 cents per bushel, $55,876,419, or $3,408,984 less than the value of last year's crop. The total yield this year was, however, 86,741,400 bushels more than was produced in 1911, and 5,349,700 bushels in excess of the big crop of 1895.

Spring Wheat.—Area harvested, 506,650 acres; average yield, 18.7 bushels per acre; total yield, 9,486,700 bushels; price per bushel, 76 cents; total value, $7,209,892.

Winter Wheat.—Area harvested, 333,710 acres; average yield per acre, 24.3 bushels; total yield, 8,133,530 bushels; average price, 78 cents per bushel; total value, $6,344,153.

Barley.—Average per acre, 32.5 bushels; total yield, 9,587,760; farm price, 50 cents; total value, $4,793,880.

Rye.—Average yield 20.7 bushels per acre; total crop, 888,530 bushels; farm price, 61 cents; total value, $542,003.

Flax Seed.—Average per acre, 11.3 bushels; total product, 423,000 bushels; total value at $1.31 per bushel, $554,208.

Potatoes.—Average yield per acre, 104 bushels; total yield, 12,904,500 bushels; average price, 44 cents; total value, $5,677,980.

Hay (Tame).—Average yield, 1.6 tons; total yield, 4,287,600 tons; average price, $9.89; total value, $42,404,364.

Hay (Wild).—Average yield, 1.4 tons; total yield, 1,085,440 tons; average price, $7.43; total value, $8,064,819.

Tabulated Crop Summary.

Corn	421,386,400	bu.	$151,698,624
Oats	206,949,700	bu.	55,876,419
Spring wheat	9,486,700	bu.	7,209,982
Winter wheat	8,133,530	bu.	6,344,153
Barley	9,587,760	bu.	4,793,880
Rye	888,530	bu.	542,003
Flax seed	423,060	bu.	554,208
Potatoes	12,904,500	bu.	5,677,980
Hay (Tame)	4,287,600	tons	42,404,364
Hay (Wild)	1,085,440	tons	8,064,819
Pasture and grazing	Estimated		85,000,000
Ensilage	Estimated		4,000,000
Timothy seed	Estimated		2,300,000
Clover seed	Estimated		516,736
Alfalfa and millet	Estimated		1,200,000
Sweet corn	Estimated		1,137,500
Pop corn	Estimated		600,000
Fruit crops	Estimated		5,500,000
Garden truck	Estimated		1,500,000
Miscellaneous crops	Estimated		7,500,000
Total value			$392,420,668

The estimated value of soil products for 1911 was $388,991,154.

GEO. M. CHAPPEL, *Director.*

The Committee on Resolution presented the following report which was unanimously adopted by the convention.

Resolved, That we the members of this convention, appreciate the good work the Iowa state fair is doing for the educational and agricultural interests of this state. During the past few years the state fair has taken the lead over the big state fairs and expositions of the world, and its educational value to the people of this state is fully appreciated.

We commend the loyal work done for this great fair by President Cameron, Vice-President Olson, Treasurer Gilbertson, Secretary Corey, and their associate directors. We heartily endorse their careful business management and policy and pledge them our continued support.

T. W. PURCELL,
A. G. RIGBY,
J. W. PALM,
Committee.

REPORT OF COMMITTEE ON CREDENTIALS.

The Committee on Credentials made the following report:

We, the undersigned, your Committee on Credentials, beg leave to submit the following report. Number of delegates present, seventy-four.

C. W. Hoffman,
James Nowak,
H. C. Leach,
Committee.

DELEGATES ENTITLED TO VOTE IN THE STATE AGRICULTURAL CONVENTION, DECEMBER 11, 1912.

COUNTY AND DISTRICT FAIR ASSOCIATION.

Adair County Fair Association	J. M. Wilson, Menlo
Bremer County Fair Association	J. W. Bennett, Janesville
Buchanan County Fair and Racing Assn	A. G. Rigby, Independence
Buena Vista County Agricultural Society	W. J. Sievers, Alta
Cass County Fair Association	E. F. Berg, Atlantic
Massena District Fair Association	D. P. Hogan, Massena
Clinton County Agricultural Society	A. J. Peters, Edgewood
Davis County Agricultural Society	H. C. Leach, Bloomfield
Franklin County Agricultural Society	T. W. Purcell, Hampton
Guthrie County Agricultural Society	B. F. Davidson, Menlo
Hardin County Agricultural Society	W. H. Rowen, Union
Henry County Agricultural Association	J. W. Palm, Mt. Pleasant
Iowa County Agricultural Society	U. S. Butler, Williamsburg
Jasper County Agricultural Society	F. E. Meredith, Newton
Kossuth County Agricultural Society	T. P. Harrington, Algona
Madison County Agricultural Society	T. J. Hudson, Winterset
Lake Prairie District Agricultural Society	Chas. Porter, Pella
Marshall County Fair Association	W. M. Clark, Marshalltown
Mills County Agricultural Society	Mrs. J. F. Summers, Malvern

Monona County Fair Association	N. W. McBeath
Union District Agricultural Society	C. P. Gibson, West Liberty
O'Brien County Agricultural Society	J. B. Murphy, Sutherland
Clarinda Fair Association	J. C. Beckner, Clarinda
Big Four District Fair	C. C. Patty, Fonda
Poweshiek County Central Agrl. Society	J. T. Cessna, Grinnell
Poweshiek County Central Agrl. Society	James Nowak, Malcom
Warren County Agricultural Society	Joe McCoy, Indianola
Webster County Fair and Agricultural Society	J. F. Barton, Ft. Dodge
Forest City Park and Fair Association	John L. Wheeler, Forest City
Winneshiek County Agricultural Society	E. W. Cutting, Decorah
Inter-state Live Stock Fair Association	Eugene P. Sullivan, Sioux City
Wright County Agricultural Society	W. C. Brown, Clarion

COUNTIES WHERE NO FAIRS WERE REPORTED.

Clarke County	John Ledgerwood, Weldon
Dallas County	O. L. Gray, Dallas Center
Decatur County	C. W. Hoffman, Leon
Emmet County	C. C. Heer, Armstrong
Ida County	Barney Hester, Ida Grove
Lucas County	D. A. McMains, Derby
Polk County	H. B. Frase, Des Moines
Scott County	J. G. Dutcher, Davenport
Union County	W. W. Morrow, Afton

FARMERS' INSTITUTES.

Appanoose County	J. H. Carr, Moulton
Boone County	M. J. Lundvall, Boxholm
Buena Vista County	C. A. Fulton, Storm Lake
Dallas County	B. H. VanFossen, Adel
Decatur County	A. E. Cotterill, Leon
Madison County	W. D. Patterson, Winterset
Mahaska County	Wilford Hull, Oskaloosa
Monona County	Clyde Whiting, Whiting
Polk County	A. L. Plummer, Altoona
Ringgold County	J. F. Wall, Mt. Ayr
Shelby County	L. H. Pickard, Harlan
Union County	A. M. Crawford, Afton
Warren County	J. A. Mason, Carlisle
Woodbury County	Bert L. France, Salix
Winnebago County	John Carson, Forest City

STATE BOARD OF AGRICULTURE.

OFFICERS.

President	C. E. Cameron, Alta
Vice-President	O. A. Olson, Forest City
Secretary	A. R. Corey, Des Moines
Treasurer	G. S. Gilbertson, Des Moines

EX-OFFICIO MEMBERS.

President State Agricultural College	R. A. Pearson, Ames
State Dairy and Food Commissioner	W. B. Barney, Hampton
State Veterinarian	Dr. J. I. Gibson, Des Moines

DISTRICT MEMBERS.

First District	R. S. Johnston, Columbus Junction
Second District	C. W. Phillips, Maquoketa
Third District	E. M. Reeves, Waverly
Fourth District	E. J. Curtin, Decorah
Fifth District	E. M. Wentworth, State Center
Sixth District	T. C. Legoe, What Cheer
Seventh District	C. F. Curtiss, Ames
Eighth District	F. E. Sheldon, Mt. Ayr
Ninth District	J. F. Summers, Malvern
Tenth District	J. P. Mullen, Fonda
Eleventh District	H. L. Pike, Whiting

On motion the report of the committee was adopted.

The President announced that the next order of business would be the election of President, Vice President, and member of the board from the even numbered districts.

Mr. T. W. Purcell of Franklin County placed in nomination for president Mr. C. E. Cameron of Buena Vista County to succeed himself and moved that if there were no other nominations that the secretary be instructed to cast the entire vote of the convention for Mr. Cameron. The motion was duly seconded and adopted by the convention. The seventy-four votes were so cast by the secretary and Vice President Olson declared Mr. C. E. Cameron duly elected President of the Iowa State Board of Agriculture for the ensuing year.

For vice president for the ensuing year Mr. J. P. Mullen nominated Mr. O. A. Olson of Winnebago County to succeed himself and moved that if there were no other nominations that the secretary be instructed to cast the entire vote of the convention for Mr. Olson. The nomination and motion were duly seconded, the secretary so cast the seventy-four votes of the convention and President Cameron declared Mr. O. A. Olson duly elected vice president of the Iowa State Board of Agriculture for the ensuing year.

For member of the Board from the second district Mr. C. W. Hoffman of Decatur County nominated Mr. C. W. Phillips of Jackson County to succeed himself; seconded by C. C. Heer of Emmet County. On motion the rules were suspended and the secretary instructed to cast the seventy-four votes of the convention for Mr. Phillips. The secretary so cast the vote and the president declared Mr. C. W. Phillips duly elected member of the Iowa State Board of Agriculture for the ensuing two years.

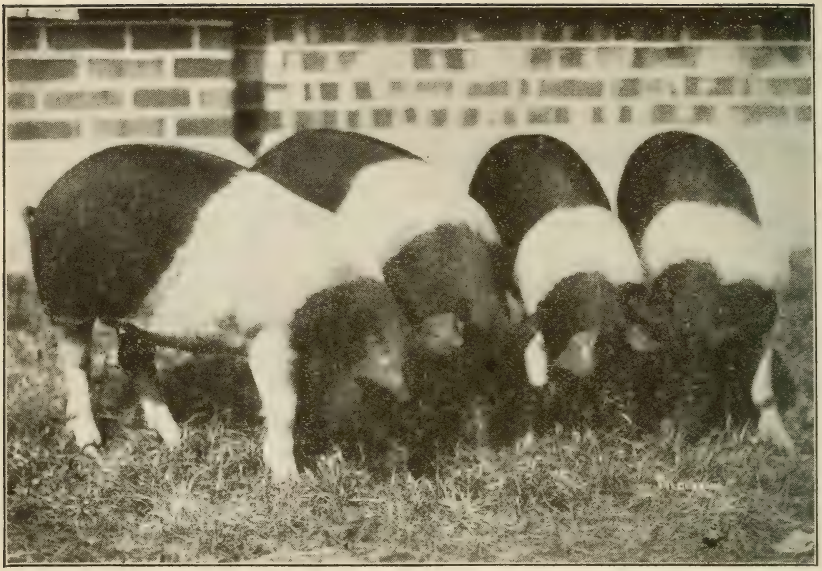
For member of the Board from the fourth district Mr. E. W. Cutting of Winneshiek County nominated Mr. E. J. Curtin of Winneshiek County to succeed himself; seconded by Mr. T. W. Purcell of Franklin County. There being no other nominations, the rules were suspended and the secretary instructed to cast the entire vote of the convention for Mr. Curtin. The secretary so cast the seventy-four votes and the president declared Mr. E. J. Curtin duly elected member of the Iowa State Board of Agriculture from the Fourth District for the ensuing two years.

Mr. H. C. Leach of Davis County nominated Mr. T. C. Legoe of Keokuk County to succeed himself as member of the board from the sixth district; motion seconded by Mr. James Nowak of Poweshiek County. There being no other nominations, on motion the rules were suspended and the secretary instructed to cast the entire vote of the convention for Mr. Legoe. The secretary so cast the seventy-four votes and the president declared Mr. Legoe duly elected member of the Iowa State Board of Agriculture from the Sixth District for the ensuing two years.

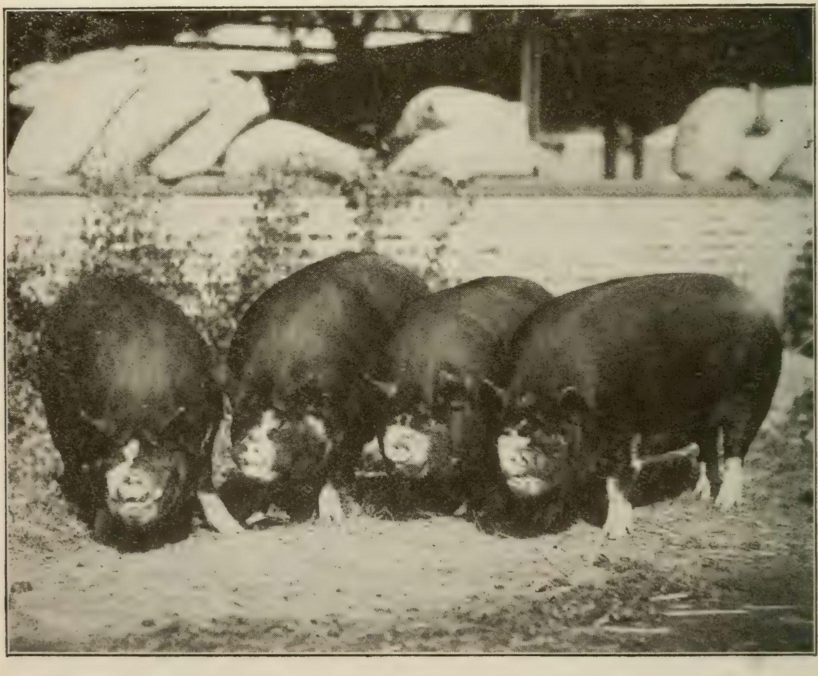
Mr. W. W. Morrow of Union County nominated Mr. F. E. Sheldon of Ringgold County to succeed himself as member of the board from the eighth district; seconded by Mr. Ledgerwood of Clark County. No other nominations were made and on motion the rules were suspended and the secretary instructed to cast the entire vote of the convention for Mr. Sheldon. The secretary so cast the seventy-four votes and the president declared Mr. Sheldon duly elected member of the Iowa State Board of Agriculture from the Eighth District for the ensuing two years.

For member of the board from the tenth district Mr. T. P. Harrington of Kossuth County nominated Mr. J. P. Mullen of Pocahontas County to succeed himself. The motion was duly seconded and, there being no other nominations, the rule was suspended and the secretary instructed to cast the entire vote of the convention for Mr. Mullen. The secretary so cast the seventy-four votes and the president declared Mr. Mullen duly elected member of the Iowa State Board of Agriculture from the Tenth District for the ensuing two years.

On motion the convention adjourned.



CHAMPION HAMPSHIRE PEN
Iowa State Fair—1912



CHAMPION BERKSHIRES
Get of Sire
Iowa State Fair 1912

PART VIII

PROCEEDINGS

OF THE

Annual Meeting of the Iowa Swine Breeders' Association

1912

OFFICERS.

President	J. H. Watson, Madrid
Vice-President	B. F. Davidson, Menlo
Secretary and Treasurer	M. P. Hancher, Rolfe

IOWA SWINE BREEDERS' ASSOCIATION.

The thirty-first annual meeting of the Iowa Swine Breeders' Association was held at Ames, Iowa, in the Agricultural Building of the Iowa State College, Tuesday, June 11, 1912.

After calling the meeting to order, President J. H. Watson, of Madrid, Iowa, gave a short address.

PRESIDENT'S ADDRESS.

"On this, the thirty-first annual meeting of our association, I congratulate you upon the bright prospects in store for you who are fortunate enough to have a few hogs. Disease has greatly reduced the number of hogs. The bad March weather made it very difficult to save many pigs and consequently the number of hogs at this time of year was never so small. With these conditions, it is only reasonable to expect hogs to sell higher. I believe we will see all the high price records broken this season.

"There is one phase that I wish to call your attention to that is costing farmers many thousands annually. That is what I call the no-purpose method of breeding. Mr. Breeder has a very good herd of hogs but he becomes dissatisfied and crosses his hogs with another breed. The results are not what he expected and, not being satisfied, he crosses with still another breed. By this time he has a hog with about all the undesirable points.

"Now, brother breeders, I think we ought to do all we can to discourage this method of breeding hogs. If a man comes looking for a male pig and we find he is going to cross him with another breed, try to get him to stick to one breed and raise a more uniform lot of hogs. It is surprising how very few strictly good hogs come to our markets. It is just as easy to raise a good hog if we go at it right, and a great deal more profitable. If there is anything in blood, it is pure blood that has brought hogs up to their present state of perfection.

"I would say to every man who raises hogs for any purpose, select a breed that suits him best, always select breeding stock from the best he can find, and every year try to improve. Brother breeders, I do not want to insinuate that any of you are guilty of this no-purpose kind of breeding, but that there are too many who are too careless and do not produce as good hogs as they should. A visit to the markets will prove this statement true."

FORAGE CROPS FOR SWINE.

PROF. W. J. KENNEDY, AMES, IOWA.

"I feel certain that the hog business in Iowa from now on is going to be different from what it has been in the past. Many years ago the hog was an adjunct in cattle feeding operations. It was used to make money in cattle feeding operations. While the cattle feeding business is good in Iowa and while people will feed them in the future, more and more people will go into dairy farming and that means that we will have to pay more and more attention to the hog. Instead of the hog being a necessary part of the cattle feeding operations, they will be raised from the standpoint of raising pork and not to help some other industry pay dividends. They will pay their own dividends and we all know there is no class of stock in this country or any other country that has paid off more mortgages than hogs, or bought more automobiles. The hog today is the most profitable animal on the farm when he is properly bred and properly fed and marketed. There is no doubt about it.

"A great deal of attention has been paid to feeds at the experiment station. Some six years ago we started out to carry on rather extensive experiments along the lines of forage crops for swine. Our idea is to get as nearly as we can some facts which will help the farmers out from the standpoint of the value of the different forage crops. We have tried out six or seven of the more common forage crops, and used them in the growing and development of young pigs. Our experiment work shows one thing—it may be contrary to what we expected and what you believe—and that is that the forage is a valuable thing for young pigs from weaning time up to the time they weigh a hundred and fifty to a hundred and seventy-five pounds, but if you have a bunch of sows or fall pigs, our experiment work indicates that they will make heavier daily gains and cheaper gains by putting those animals in the dry lot and not feeding forage crops. When they weigh up to a hundred and fifty or better the dry lot with meat meal or tankage or some feed that will build up will give cheaper gains and heavier gains, but from weaning time up to a hundred and fifty or a hundred and seventy-five pounds you can produce gains more rapidly and more economically through the use of any one of several forage crops than from dry lot feeding. Our experience is that the heavier hogs do not do as well on forage crops You can get faster daily gains on the larger animals in dry lot feeding. There are two factors which I think are more important than anything else from the standpoint of getting hogs ready for market. One is rapidity of gains and the other is economy. Economy only is not enough because in all hog feeding operations you all know that the hog is a hard animal to do anything with when he is sick and the sooner you get the animal ready for market, the better. Rapidity is an all important factor.

"I have some results of experiments which have not yet been published but will be published this fall in a bulletin on forage crops. These experiments embrace the use of alfalfa, clover, rape, sweet clover, oats, peas and rape; oats, clover and rape; blue grass and timothy; and winter rye. Blue grass is permanent, alfalfa is somewhat permanent, clover usually lasts two years, and the others are annual crops. We have tried to get something that would answer the needs of every man. For a grain ration to feed with the alfalfa or whatever it might be we fed ear corn. Several years ago we started in to find out the best method of preparing corn for swine. We fed ear corn, soaked shelled corn, dry corn meal, soaked corn meal, but in all of our experience we have found that pigs up to two hundred pounds made heavier daily gains and more economical gains on ear corn alone than any other manner. If that is true, there is no need of going to the work of shelling corn or soaking and grinding it.

"The experiments were on about four hundred head. It is not guess work. It was on large numbers for three different years and in checked lots. For pigs over two hundred pounds we found that soaked corn or soaked corn meal gave cheaper gains. The shelling and soaking or grinding seemed to appeal more to them. The ear corn was fed to the pigs under two hundred pounds in the dry lots and every two or three weeks the cobs were raked up and burned and the ashes were there for them to eat.

The details of information with reference to these experiments are given in the following table:

Kind of Pasture	Hogs per acre	No. days	Aver. initial weight	Aver. daily gain	Gain per 100 lbs.	Cost of 100% gain	Net returns per bu. corn	Pork accredited to acre
Alfalfa	16.48	180	18.8	1.05	4.05	$2.88	86.6	865
Clover	18.75	141	39.0	1.13	3.70	3.84	71.7	650
Rape	20.00	141	37.9	1.104	3.64	3.79	73.1	781
Sweet Clover	22.50	141	37.9	1.02	3.97	3.70	73.2	854
Oats, Peas and Rape	23.64	160	26.2	1.156	4.08	3.77	70.8	1147
Oats, Clover and Rape	16.66	147	25.8	.914	3.62	3.66	76.6	795
Blue Grass and Timothy	13.94	165	33.0	.723	3.69	4.09	61.4	378
Winter Rye	31.11	65	36.46	.81	4.15	3.67	75.8	347

"We added a little meat meal to the ration (there is no difference between meat meal and tankage) for the reason that it added a little more protein and balanced the ration better.

"From the table given you will see the result taken in 1911, for alfalfa. An acre of alfalfa carried sixteen and a half pigs from May 19 to November 15, a period of a hundred and eighty days. These pigs averaged 18.8 pounds each at the beginning, made an average daily gain of 1.05 pounds, the gain per hundred pounds ration daily being 4.05, and produced these gains at $2.88 per hundred. In figuring up the cost we charged up the rent, the seed, and all the work done and found that it returned 86.6 cents for every bushel of corn. We had 865 pounds of pigs at the end of the 180 day period which we could not credit to anything but alfalfa, besides taking off 3,838 pounds of alfalfa from the field. That hay would now be worth $20 but we put it in at $14 a ton. Thus from an acre of alfalfa we got 865 pounds of pork and 3,838 pounds of alfalfa hay. In feeding alfalfa we fed fourteen parts corn and one part meat meal. It takes less protein to balance an alaifa ration than clover.

"On an acre of clover we had 18.75 hogs for 141 days. These pigs averaged at the beginning 39 pounds each. They made an average daily gain of 1.13 pounds, gain per hundred pounds daily 3.70, cost of producing gains $3.84 per hundred, net returns per bushel of corn 71.7 cents and 650 pounds of pork from the acre of clover at the end of the 141 days.

With rape we had twenty pigs to the acre for 141 days. The average initial weight was 37.9 pounds, average daily gain 1.104, gain per hundred pounds 3.64, cost per hundred pounds gain $3.79, net returns per bushel of corn 73.1 cents, 731 pounds of pork to the acre of rape. This result was obtained in 1910. Last year we produced 1,438 pounds of pork from an acre of rape but in giving this table we wanted to give an average.

"On an acre of sweet clover we had 23.5 pigs for a period of 141 days. The average initial weight of these pigs was 37.9 and the average daily gain 1.02 pounds. The gain per hundred pounds was 3.97, cost of a hundred pounds gain $3.70, net returns per bushel of corn 73.3 cents and 854 pounds of pork to the acre of sweet clover. Sweet clover is something that you see growing everywhere. It belongs to the clover and alfalfa family. We sowed our field along in April at the rate of eighteen pounds of seed per acre. We turned the hogs on it on the 27th of June. You have to keep it cut down pretty close. If you do not it gets woody. If you seed sweet clover every year it is good for hogs. You can grow it on land you can't grow alfalfa on. For a few days the hogs don't like it because it is a little bitter but if you give them nothing else they will take to it and eat it.

"The oats, peas and rape carried 23.54 pigs for 160 days. The average initial weight was 26.2, average daily gain 1,166, gain per hundred pounds 4.08, cost per hundred pounds gain $3.77, net returns per bushel of corn 70.8 cents, pork produced to acre of oats, peas and rape, 1,147. This result was obtained in 1911.

"In sowing oats, peas and rape, sow at the rate of a bushel of oats, a bushel of peas and about four pounds of rape seed. We mixed them all together and sowed all at the same time.

"On the oats, clover and rape we had 16.66 pigs per acre for 147 days. The average initial weight was 25.8 pounds, average daily gain .914, gain per hundred 3.62, cost of a hundred pounds gain $3.56, net returns per bushel of corn 76.6 cents, pounds of pork to the acre 795. In sowing the oats, clover and rape sow about one and a half bushels of oats per acre, eight pounds of clover and three or four pounds of rape. Regarding this combination I want to say that if you have a good season the clover will come on and make a full stand but if you have a dry season you will not have much. The oats, peas and rape is a much surer crop one year with another than oats, clover and rape.

"The blue grass pasture was a mixture of blue grass three parts and timothy one part. This pasture carried 13.94 hogs per acre for 165 days. The average initial weight was 33 pounds, average daily gain .723, gain per hundred pounds 3.69, cost of a hundred pounds gain $4.09, net returns per bushel of corn 61.4 cents, and 378 pounds of pork to the acre. In regard to blue grass and timothy I will say that I believe it would be best to feed about seven parts of corn and one part meat meal (which is a little more meat meal than we used) for the reason that neither blue grass nor timothy are very rich in protein.

"On the winter rye were 31.11 hogs per acre for 65 days. The initial weight was 36.46, average daily gain .81, gain per hundred 4.15, cost of a hundred pounds gain $3.67, net returns per bushel of corn 75.8 cents, pounds of pork to the acre 347. I don't know what experience others have had but we find that little pigs scour a great deal on rye and with shoats we have found the same trouble. To avoid this we fed one tablespoonful of blood meal to the shoats and about a teaspoonful to the little pigs. We followed the practice of hogging down the rye, but it is something I would not recommend at all. We did not get a third of the market value of rye by hogging it down. The hogs did not do well at all.

"Clover is a useful crop. Rape does well everywhere. Sweet clover is something that I suggest you use not more than one year without reseeding. Oats, peas and rape we can recommend. Any man can grow it and it is something you don't have to carry through the winter and it will give good results. Oats, clover and rape does very well if you have plenty of moisture to get your clover through. Rye makes a very good fall feed and also early spring except that it makes the pigs scour. In recommending forage crops there are three or four things to take into consideration. You have to get a crop that will produce a heavy yield per acre. You have to get a crop that the hogs will eat and one that is rich in protein. Forage crops to be ideal should take your hogs from May to November. Blue grass lasts only during July and August; clover does the same. Alfalfa comes on early in the season, the hogs like it, and it is the richest in protein of any crop we have Alfalfa would be my first choice to feed with corn for hogs wherever a man can grow it. Rape you can sow at any time of the year, even starting in as late as July, and it lasts well throughout the year. In handling rape it is a good idea to let it get ten or twelve or fourteen inches high before you put your hogs in. Don't pasture it too close. Sweet clover is something a man can grow when he cannot grow other things. If you grow sweet clover, keep it cut down pretty well. Oats, peas and rape is something a man can grow any time. The same is true of oats, clover and rape. Rye is pretty good, but don't hog it down."

DISCUSSION.

"Do you feed meat meal dry?"

Prof. Kennedy: We feed it in the drinking water. Get your hogs to drink all the water they can and feed the meat meal in it. You can feed it dry but they will blow it some.

"Was the amount of corn fed all they would eat?"

Prof. Kennedy: It was all they would eat in a given time and it has given very good results.

"Would you decrease the amount of meat meal provided you have plenty of skim milk?"

Prof. Kennedy: If you have skimmed milk, don't feed meat meal at all. Every man should grow everything he can on the farm and if you have skimmed milk that is the best thing to use.

"Skimmed milk is rich in protein is it not?"

Prof. Kennedy: Yes. If you have skimmed milk with forage, don't feed meat meal or tankage. Feed ear corn to the younger pigs. The man who has skimmed milk is very fortunate.

"What about middlings and shorts?"

Prof. Kennedy: Both are exceptionally good feeds but a hundred pounds of shorts contains twelve and a half pounds of protein and meat meal contains four times as much protein. Shorts are always good and middlings are always good if you can get them cheap enough. The question is whether you could afford to feed middlings or shorts. We have tried it and could not make it pay. I am speaking more from the commercial standpoint. Our best results were from meat meal and corn.

"How about a half a stand of corn and rape for hogging down?"

Prof. Kennedy: We have never had a half a stand here. You will not have as much rape with a whole stand of corn. The best results we have had from a hogging down standpoint was when we sowed rye when we were laying the corn by. Hogging down is a good way to handle the corn corp.

PUBLIC SALES.

MR. C. E. LUTHER, GRAND JUNCTION, IOWA.

"This public sale question means a good deal to a good many people. I suppose this subject of 'Public Sales' means the difference between public sales and private sales. I think a private sale is a good thing some times providing you can sell your property readily and quickly. A great many times in the fall and winter a farmer will have a bunch of hogs advertised in all the newspapers in Iowa to sell at private sale. He will say, 'I have so many gilts or males that I will sell at so many dollars.' Some of these men will close out and some will not. They have paid for advertising and worked hard all fall and winter and maybe missed a chance to go out and buy some good hogs for themselves. The man who sells at private sale has to stay at home in order to catch the buyer and he will work all year to sell those hogs.

"If he has a public sale he will close them out in one day. Sometimes he has something left on his hands but as a rule if a man has a public sale he sells everything in one day. Perhaps he don't get as much money but he gets it all at once, and it comes handier to pay off bills with than if it came in little sums.

"A public sale is a great thing to think about. Sometimes a man makes a mistake in making his public sale and sometimes the auctioneer makes a mistake. An auctioneer may go to conduct a sale where there will be a large crowd and he thinks he is going to make a great success of that sale but if he don't know how to handle the hogs he will make a failure and then perhaps the very next day go to a small crowd and when he gets through everything will be satisfactory. It depends sometimes on the man who is having the sale—whether he has been honest with the breeders in the past—whether he has made good his statements. When a man is having a public sale if he makes a statement that he will do so and so, I say he must make the statement good not by his word alone but by his honor and it will have the right effect on his next sale. But if a man makes a sale and makes statements that he don't fulfill, that makes a difference. I know of instances where men have bought hogs and when they got them home they were not at all as they should be or as they were represented. Perhaps the man who sold the hog don't know it and perhaps he does. He will tell you he did not know it, and sometimes he don't, but that is a mighty poor thing for a man making a public sale. A man may say he has hogs with large litters, twelve or fifteen to the litter. I don't believe there is a sow living that raised fifteen pigs. I never had one raise more than eight or nine and raise them right. She may have had that many pigs, but did she raise that many. That is the point a man wants to make. Be careful when you make these statements and make them in a way that you can substantiate them.

"After your sale is over don't be months getting out your pedigrees. That hurts a public sale. You can all have public sales if you will do as you ought to do. When a man has a sale he should say to the auctioneer to make only statements that are true, to do all he can do to sell the stuff honestly and if he can't sell it for what it is worth to take what he can get. An auctioneer can't be crooked and a farmer can't be crooked and make a good sale. Another thing that shouldn't be done is bidding up to get high prices, or boosting. The stock should be sold for what it is worth.

"I believe our sales will be better this year. I believe that the farmers and breeders are looking for good hogs this season. Prices have gone up a little and there are very few pigs. We had bad weather in the spring and pigs are scarce. I think you will find that hogs will be high and sales will be good this winter.

"If a man is dishonest he can't make a good sale. You all know that if you go to a man's sale and you know he is honest you will bid your heads off but if you know he is not honest you won't bid. One sale I went to, when we went down to the tent there were only seven men there. I said we couldn't have any sale but the man said we would try it and we sold the entire offering and got an average of $38 a head and only fifteen people there. That man was honest, he said the hogs were so and so and he knew those men were there to buy his stuff, and buy it at what it was worth. If a man talks boosting, kill it right down. It will help the public sales. I don't expect to sell all the hogs this year but I expect to sell them on the square."

VENTILATION AND CARE OF WINTER PIGS.

PROF. C. F. CURTISS, AMES, IOWA.

"One point I should emphasize regarding the fall pig is to have them come as early as possible so they will be pretty good and thrifty before winter comes on. I believe that is half the battle right there. If they are late they will have a hard time getting through the winter no matter what care and protection you give them. If you have the pigs come early in the fall so that they get two or three months growth before the severe winter sets in, and handle them in such a way that they get a good start, when winter comes half your troubles will be over. Of course it is necessary to provide good quarters. The quarters need to be better than for mature hogs because they will not stand cold and exposure as well. Then, as has been suggested by this subject, you need to provide for good ventilation. The ordinary hog house is sometimes unsatisfactory. Ordinarily if you have not a large enough bunch to fill the house or to occupy the quarters that you have, the old fashioned method of a good sleeping place in the straw pile, properly protected, or in a banked barn or some place of that kind where you can have a temperature that will afford comfort is often more satisfactory than the ordinary hog buildings. Many of the hog buildings are not warm enough for such conditions as you have with the fall pigs. Some breeders have resorted to the old method of the rail pen in the straw pile. That is a pretty good place if they can go in far enough to be warm. Ordinarily we have got away from the straw pile method but it still has some advantages. Another important thing is the bedding. There ought to be plenty of clean bedding and it should be changed often enough to avoid skin diseases and troubles that come to the fall pigs and particularly the late fall pigs. The bedding should be clean and fresh and it ought to be of rye straw if you have it or something that does not accumulate dust and chaff.

"If the pigs do not have suitable quarters that are sufficiently warm and well ventilated, a good place to feed and good bedding, the chances are not favorable for the late fall pig. A good many men figure that the fall pig is not of any account. He is not of a great deal account unless he comes fairly early, starts into the winter thrifty and in a good condition, and unless he can be carried through in a fairly thrifty condition. Sometimes the fall pigs come out in the spring not much larger than in the fall. On the other hand, if the breeder takes pains to have them start well and gives them good quarters, good bedding, and so on, they can be carried through the winter in good condition, make a good growth and grow rapidly when warm weather comes in the spring. Of course you seldom get the same growth with fall pigs as you do with spring pigs. You will sacrifice some at best in this climate but you will make up a good part of that if you can carry the pigs through the winter and into spring thrifty. People that live further south do not have this difficulty.

"Now with reference to the feed. Probably you would not vary that a great deal from what you would furnish to the spring farrowed pig. Of course you cannot have all the feed that you would have for the spring pig because you lack the pasture and green feed but you would feed about the same grain ration and if you can have alfalfa that will perhaps be the best substitute, with roots if you can have them, for the green succulent feed of summer time. Not many farmers have roots. A good many have alfalfa and the number is increasing. It may be used in the hog ration with good results.

"One thing that should be avoided I think in the matter of feeding is taking out of a warm bed and feeding in the open where they get cold. If they have a bedding place where they are warm, and particularly if the ventilation is not satisfactory, and then come out into the cold air at feeding time, you might almost as well knock your pigs in the head because you will not get through with satisfactory results. It does not cost much more to furnish suitable quarters and ventilation and satisfactory feeding place as well as sleeping place. If you are going to raise fall pigs at all they have to be raised right. Nothing will lose money faster than pigs carried over the winter without making any growth. Pigs necessarily require a heavy feeding bill and if they don't make any growth you can lose money pretty fast in the hog business. If you can carry them through in a thrifty condition and make up the growth in the spring they will give quite as good and sometimes more satisfactory results than those farrowed in the spring.

"One thing in favor of the fall pig, by that I mean the early fall pig, is that he usually finishes and goes into the market at a more valuable time as far as prices are concerned than the spring pig."

DISCUSSION.

"Will you say a word about ensilage for fall pigs?"

Prof. Curtiss: I cannot say from any experience we have had here but I think it might be used to a certain extent in the ration to good advantage. On the whole, however, I think you would get better results from alfalfa. The ensilage will serve as part of the ration and to some extent suply the succulence in the ration. It has been used for brood sows to considerable extent and we might rely on it to some extent for the succulence but not for growth and development for the pigs.

"Have you had any experience with pumpkins?"

Prof. Curtiss: Nothing better as long as they last but that is only for a limited time. They constitute one of the good things of the farm that every hog raiser ought to grow. You cannot rely upon them for the main part of the ration but to supplement corn and other grain feeds they serve an excellent purpose. There is a common impression that the pumpkin seeds have a tendency to eliminate worms. I know that they do tend to put pigs into thrifty condition better than most any other feed you can use at that time of the year. You cannot keep them on hand throughout the entire winter. You can use them in the fall and store them for a time but they will not keep for any great length of time.

"What would you suggest along the line of ventilation?"

Prof. Curtiss: The same principle that applies to the ventilation of all barns. There is too little attention paid to the ventilation and the lighting of our farm buildings in general. Perhaps that is true of hog barns more than any other. The lighting is very simple and it pays to have plenty of it. In the matter of ventilation, the ventilating chutes extending from the floor to the roof will furnish fairly good ventilation. The system used in ventilating dairy barns can be used but it may be simplified in the hog barns. There should be, however, the ventilating chutes and other means of admitting air without a draft.

"Is it not true that straw is a natural ventilator?"

"Yes, you get naturally a great deal of ventilation there although you can have straw shelter and have it so close that you lack ventilation with that but straw walls and straw covering do naturally furnish much ventilation. The rail pens covered with straw are all right provided you do not have too many hogs in the enclosure. One point is that we ought not to keep too many pigs in the same sleeping quarters. Divide them and keep not more than twelve or fifteen together so that they cannot pile up. A great deal of trouble comes from hogs piling up and getting heated and steaming, especially when they are fed out in the cold where they are exposed."

THE PROFITABLE TYPE OF HOG FOR FARMER AND BREEDER.

T. F. LUTHER, GRAND JUNCTION, IOWA.

"A great many of you have heard me talk before on this subject of the profitable hog for the breeder and for the farmer to raise and the older I grow in the business the more I am convinced that the profitable hog for the farmer is the profitable hog for the breeder. I am sorry to say that a great many of the farmers and breeders of Iowa and sister states would have been a whole lot better off for the last few years if they had raised pork instead of breeding for the fancy hog. I like style and class among hogs but it seems that we have been going backward instead of forward. The Poland China men discovered it some time back and they have gone to breeding size and they have won. The Chester White men have been breeding more for size and weight than for the fancy ear and fancy eye and the Duroc men have talked the large type for the last four or five years but many have gone backward in the matter of size.

"I have attended every state fair for the last twenty-nine years and you all know that there has been a great deal of change in the style and size of hogs in that time.

"The time is past for the smaller hogs. I feel that with the high price of land and everything that goes on the farm that we ought to have a hog and try to raise a hog that will weigh 300 to 350 pounds at a year old, that will finish nicely. We have been breeding for a nicer ear and head, better feet and loin and ham and back and we have been after the better hog and we have it but we have to keep the size as well. The end of every hog is the pork barrel and the farmer wants the sow and male that will produce a hog that will go onto the scale and weigh three hundred or three hundred and fifty or even four hundred pounds at a year old. If a farmer is feeding the same amount of feed to a hog weighing 250 pounds as to one weighing 350 the balance don't compare with the right side of the ledger.

"With regard to breeding stock for the man selling at public auction. There have been too many immature sows sold at public auction. I believe no gilt should go into the sale ring that don't weigh three hundred pounds. It can be done. There is no farmer but can with proper care and handling and proper feeding—and not over-feeding either—make his gilts weigh three hundred pounds at a year old if he has the right kind of breeding stock. As I have said, the ultimate end of every pig is the pork barrel and what it will weigh. If you go to a public sale you want a nice large gilt, one with scale and style, and with a good ear and eye."

Mr. H. S. Allen of Russell, Iowa, was on the program for a paper on the subject ''Fitting for the Show.'' Mr. Allen was unable to be present but he forwarded an article which treated the question with the utmost brevity. His principal points were the selection of animals with merit and a course of treatment that would lead to their development. Evidently he looked upon the matter as one on which every man present would be fully posted, so no secrets were revealed. No discussion was given to the subject.

FEEDING THE BROOD SOW.

PROF. JOHN M. EVVARD, AMES, IOWA.

"The subject for discussion is the brood sow and her feeding. In feeding the brood sow we realize, as we do in other methods of feeding in the corn belt, that corn is the premier food and thus the problem is one of finding a suitable supplement to corn because corn furnishes nutrients, the heat formers and some of the ash at a lower price than any other food it is possible to raise. Corn is not complete in itself. It lacks three elements which are essential to the growth and well being of animals. One is protein, which goes to form muscle, brain, nerve tissue, hair, horn, etc. The other two ingredients which are lacking are calcium and sulphur. Calcium comprises about forty per cent of the dry matter of bone. It is impossible to make bone unless we have calcium and corn is very deficient in this bone building element. In phosphorus corn is rich and we do not have to worry about this, which is the other principal bone forming element. Most of the substances we use with corn contain an abundance of sulphur.

"In order to determine what rations were best we took up the problem determining the cost of the ration and its efficiency as judged by the offspring which were produced. It is not alone sufficient that we should have a cheap ration in getting the sow through the winter. The mere price of food stuffs determines whether or not they are efficient in carrying the sow through the winter but their effect on the offspring determines whether they would be used.

"First we take up feeding of the animals at pregnancy. In 1910 we kept track of the sows, weighing every ten days, and when the offspring came in the spring we found that the fourteen sows which were gaining the heaviest at the time pregnation occurred farrowed seven or eight pigs. The others gave birth to more than a pig less. The lightest gave birth to seven and a half pigs exactly. The lesson to be learned is this. That the sow at breeding time should be given a good healthy, vigorous ration. I mean one which will produce vigor. In other words, keep the sow going—have her gaining well at that time. She will be more likely to farrow more live pigs. Sheep men for ages have believed in the practice of flushing at breeding time. They have believed that this would produce more twin lambs at birth and we believe that they are right. Corn was the basis of all our experiments along this line."

The following tables give the results obtained in experiments of feeding brood sows:

WINTERING GILTS 1910-1911

Ration	Daily shelled corn	Daily supplemental feed	Average daily gain	Average number in litter	Average weight litter	Average weight pig	Vigor of Pigs		Net cost of Pig
							Strong	Weak	
Ear corn alone	3.65	.000	.354	7.6	13.2	1.74	68	16	.29
Ear corn and 1-30 meat meal	3.21	.127	.582	7.4	14.9	2.01	92	3	.07
Ear corn and 4-30 meat meal	2.75	.432	.635	8.8	19.6	2.13	93	2	.13
Ear corn, oats, bran, middlings and oil meal	2.73	1.07	.350	10.6	19.5	1.84	83	6	.45
Ear corn, chopped clover and middlings	3.78	1.56 Cl. .26 M.	.58	7.	15.3	2.19	86	11	.35
Ear corn and clover in rack	3.67	.302	.528	6.4	14.2	2.21	83	6	.13
Ear corn and alfalfa in rack	3.74	1.106	.627	7.6	17.4	2.29	89	0	.19

WINTERING YEARLING SOWS 1911-1912.

4 lots 10 sows each

Ear corn alone	5.31	.000	.70	9.2	17.	1.82	41	24	.19
Ear corn and 1-10 meat meal	4.22	.51	.84	10.1	24.	2.41	85	9	.19
Ear corn and ¼ oil meal	4.11	1.22	.70	8.8	19.5	2.22	76	9	.61
Ear corn and alfalfa	5.23	.32	.67	9.9	17.5	1.77	38	24	.27

WINTERING GILTS 1911-1912

4 lots 5 sows each

Ear corn alone	3.95	.000	.52	5.6	11.2	2.	80	11	.19
Ear corn and 1-10 meat meal	3.07	.37	.57	8.4	18.1	2.19	90	2	.20
Ear corn and ¼ oil meal	3.59	.80	.58	8.4	15.1	1.79	74	5	.30
Ear corn and alfalfa	4.11	.20	.57	9.	17.3	1.92	50	7	.20

"The sows in the yearling lot, 1911-1912, were the same sows as those used in the experiments of the previous year and the gilts in the 1911-1912 lot were the daughters of the sows used in the previous experiment. We found that the old sows ate more corn than the young ones. Toward the last the fourth lot in the yearling sow experiment refused to eat the alfalfa and it was practically the same as the first lot. Old sows can get along on corn better than the young ones in so far as their own needs are concerned.

"The size, the vigor of the pig, the bone of the pig, and the general make-up are affected more or less by the ration which the sow receives. You will wonder why the oil meal lot in the gilt experiment fell down. They refused to eat the oil meal during the last sixty days of pregnancy. Why that is I do not know. The old sows ate the oil meal but the young sows would not and as soon as they quit they began to lose. Even if a sow is eating alfalfa she should have some meat meal or tankage along with it.

"As has been said, corn is lacking in calcium and in protein. Now, where does the sow get these elements if she does not have them in her feed? She robs her own body and puts it into her offspring. So in caring for the brood sows during the winter it is well to mix up a little senti-

ment and not have them whining around for something they need and don't have. It will be good from the financial side as well."

DISCUSSION.

"Do you increase the meat meal or decrease the corn during farrowing time?"

Prof. Evvard: We keep the ration the same. You could increase the meat meal a little during the last half of the time because ninety per cent of the dry matter of the fetus is made in the last half of gestation. We found that the gilts getting meat meal farrowed stronger pigs but they also farrowed a little bit sooner. The period of gestation was lessened about a day, with better rations they farrowed a little sooner.

"How did these rations affect the sows from the suckling standpoint?"

"In the gilt lot 1910-1911, the lot on ear corn kept on receiving ear corn after farrowing and these pigs at weaning time weighed sixty-seven pounds. The second lot got one-thirtieth meat meal and did quite well. Lot three did very well but the meat meal was a little rich for the pigs so it is better to make up a ration in which the meat meal is not allowed to get into the little pigs directly. Lot four did very well but not so well as lot three. Lots five, six and seven were all fed corn and alfalfa and they did moderately well. Last year we took all of these lots and after farrowing time gave them a ration composed of seventy parts corn, ten parts meat meal or tankage, ten parts middlings, five parts bran, two parts oil meal, one part salt, one part bone flour and one part lime stone dust. This did very well. The corn is fed soaked in season and in the winter time ground and fed as a slop."

"Is it advisable to reduce the feed at weaning time?"

Prof. Evvard: We reduce the feed to practically nothing the day we take the pigs away. Then after a day or two start feeding again.

"How would you feed this meat meal to the pigs?"

Prof. Evvard: We give them the meat meal before they have the corn. Make it in the form of a warm slop. It is very important that they don't get an over-dose. Every pig should get what is coming to him and no more.

VACCINATING.

DR. STANGE, AMES, IOWA.

"To begin with I would like to explain something of the basis upon which this vaccination works. You understand the diphtheria antitoxin used for human beings and have heard more or less about the tetanus antitoxin used for lock jaw. The idea in all of these methods is that an animal that has recovered from any one of the contagious diseases is immune to these diseases afterwards. We have some diseases in the human being which after a person recovers will not attack that individual a second time. Small pox is a good example of that.

"Now we find that a hog that has recovered from hog cholera will not ordinarily contract the disease a second time. This encouraged us to think that sometime we would be able to produce a serum which would protect hogs against this disease.

"For a number of years there was some question .of doubt in regard to the cause of hog cholera. It was supposed to be caused by a germ similar to the typhoid baccillus which causes typhoid in man. However, it was found that the actual cause of the disease was a virus, which we think we know is a germ so small that it can not be seen and which will pass through the pores of a porcelain filter. We can take the blood from an affected animal, filter it, inject it into a healthy hog and produce the disease in that hog. There is a disease in cattle which is called Rinderpest, a tropical disease, which is caused by a virus which acts in very much the same manner and the noted Dr. Kock worked out a method of vaccinating animals which we applied to hog cholera and found to be successful. We have, then, a cause which is fairly definitely known and a method of vaccinating animals which has been quite successful, although it is to some extent in the experimental stage and there are a great many things which are not just as they should be. We have not mastered all of the problems in connection with this disease.

"Taking the method of vaccination, I will go over it briefly. We have two methods. One is called the serum alone and the other the serum simultaneous method. One is a temporary protection and the other a more permanent and lasting protection against the disease. In the one case the animal body takes no active part in protecting itself against the disease, while in the other case the animal body itself must produce substances which protect it against the germ.

"To produce the serum we produce hog cholera in healthy animals, preferably young pigs weighing thirty to forty pounds. When they become sick we bleed them and inject that disease producing blood into hogs which have recovered from the disease or that have been immunized by the simultaneous method. This increases the resistance to a great extent. I have myself injected sufficient disease producing blood into one hog to kill about a hundred hogs at one dose, so that you see an animal that is immune to hog cholera will resist enormous doses of disease producing blood. Then after about ten days we bleed this animal that has received this large quantity of disease producing blood and that blood is what we ordinarily call the serum. It contains a substance which will protect other hogs against cholera when it is injected in small doses, that is, about two-thirds of an ounce for a hog weighing a hundred pounds. When you use this serum on a hog that has never had hog cholera, that hog does not take part in producing those substances because you inject them into its body after they have been produced by another hog. Consequently it is not lasting and when all this substance has been eliminated the hog will take hog cholera again. But when it is exposed to hog cholera it must overcome that infection and take some active part in overcoming the disease and in that case you have lasting immunity. So we have the two methods which consist of serum and serum and disease producing blood.

"In regard to the indications for the two methods. Of course circumstances will vary on different farms and in different outbreaks but I think the most successful method is being carried out in Ohio. There they go into the herd and take the temperature of every hog. The hogs that show a rise of temperature, indicating that they are infected, get a dose of serum alone. All those with a normal temperature, indicating that if they are infected the disease has not made much headway, get a dose of virulent blood and serum and in that way they confer lasting immunity on all animals that are treated.

"Results vary a great deal. Just why this is I do not know. There are so many factors to take into consideration in the manufacture of the serum, the keeping of it, and the intelligent use of it that it is hard to say just where the fault is but it is quite easy to make a little mistake or get a faulty test on the serum. It must be tested after it is drawn from the animal because some hogs do not produce a good serum. In order to test it you take varying quantities and inject it into several different pigs, each receiving a different sized dose, and then inject disease producing blood, and in that way you get a check on the serum. Sometimes you get very strong serum and sometimes rather weak.

"Then there is another thing that has come to our attention a number of times and that is that where you have an old outbreak of hog cholera where say fifty per cent of the animals have died, you usually do not get very good results. In that case most of the animals are suffering from the disease and you hardly ever get satisfactory results.

"The disease can be checked a great many times in a locality by the use of the serum. That is, if one farmer has cholera in his herd and the neighbors all vaccinate you can check the disease in that way. In addition to vaccinating I always advise dividing the herd into small lots and taking the different lots to different parts of the farm. Then use the serum and simultaneous method if you know you have good serum. The danger comes in that if you nave not good serum you will inoculate your hogs with hog cholera and you may lose many of them. Be sure that the serum is absolutely good."

DISCUSSION.

"Will hogs that have not been vaccinated contract the disease from those that have been vaccinated?"

Dr. Stange: Not unless the hogs that have been vaccinated show symptoms of the disease. They should not show symptoms. If they do, it shows that the serum was not sufficiently potent.

"How are you going to find out?"

Dr. Stange: It should be tested. You have to depend upon the manufacturer unless you want to experiment yourself and test it out before you use it. I understand that the Bureau of Animal Industry at Washington has in mind the supervision of the manufacture of the serum. This has all been worked out by the government and the government has a patent on this method so that no private individual can get a patent on the process and exclude all other manufacturers. That is why we have so many serum establishments around the country. Everyone is at liberty to do so.

"In case you do make this mistake and inoculate your herd with hog cholera, what is the proper thing to do then?"

Dr. Stange: The thing to do then is to get some serum that you know is good as soon as you can and give them large doses of it.

"Do you give them the double treatment all at the same time?"

Dr. Stange: I would inject the blood on one side and the serum on the other side. Do not mix it. The serum has very few if any curative properties—it is preventative. You can't expect to cure many hogs with the serum.

"If you try to keep your whole herd immunized, when do you work on the little pigs?"

Dr. Stange: About the time they weigh from twenty to thirty pounds or about weaning time unless there is some danger of the pigs becoming infected with hog cholera before that time. They carry the immunity for considerable time.

"How does the cholera hog look on the inside?"

Dr. Stange: The disease affects the kidneys, the bones, the lymphatic glands and the skin. The bones show darkening of the marrow. In the packing house when a hog is split down the center you can see the marrow of the spine and other bones looks black. Then the skin under the surface of the body gets bluish or blackish and often you can see this before the animal dies. You do not want to mistake that for the black discoloration that hogs have after they die and lie for some time. When hogs have cholera this dark color is usually found around the abdomen and around the ears. The kidneys are spotted and look as though you took blood on the finger and snapped your finger. These little specks of blood show all through the kidneys. The lymphatic glands are small glands not much larger in a healthy animal than the nail on your little finger. Usually they are of a greenish red or greenish color. When the hog has cholera these glands look bloody or purplish or black, depending upon the degree of infection. Then you will find in the more chronic cases ulcers around the blind gut which is found just where the small intestine enters the larger one. These ulcers vary. They may be very small, perhaps not larger than the end of a pencil, and in other cases they are very numerous and stand up in the shape of a button. They are greenish or greenish yellow. In hogs that die in a few days after being infected these do not show at all. Sometimes the lungs become infected and in this case the lungs look like liver and become firm like meat. Sometimes you find the bladder affected. The urine from the hog sick with hog cholera will infect animals and produce the disease. The disease is spread a great deal in this way.

"Will this vaccination protect from swine plague the same as it does from cholera?"

Dr. Stange: There is some question as to whether we have what we call swine plague. Opinions have changed on that. It used to be very confusing. Sometimes there would be lesions in the intestines and that was called hog cholera; if the lesions were in the lungs it was called swine plague. Protection against one disease does not insure protection against another. We know that a hog that has had hog cholera won't have it again and we have not found any hogs that are immune to hog cholera that will take what we used to call swine plague so we have come to the conclusion that we have only one disease that is dangerous from a plague standpoint and that is hog cholera. We have it affecting both the lungs and the intestines.

"Some breeders have accused vaccination of causing abortions and small pigs at birth."

Dr. Stange: I don't believe there is anything in that. There is one thing that everyone should be careful about and that is to be as clean as possible. Some people think a hog can stand anything but it is necessary to be clean because you will get some bad results if you are not careful. Don't pour the serum out and let it set around in the dust in the shed. Some people can't account for the bad results they get. They get abscesses and three or four animals will die. That is the fault of the man who is doing the work. There should not be any abscesses if the serum is well made and properly used.

"Where could we get a party safe to depend on for this work?"

Dr. Stange: I don't try to keep track of these firms and we have no check on their work. I generally recommend the state veterinarian. He has an appropriation for producing hog cholera serum for the state of Iowa. Of course the past year he could not supply the demand. When a man is doing work for the state that way about his only object is to produce good serum and I have not heard any complaints from the serum produced by the state.

"Should you advise the breeder to vaccinate a herd that is doing well?"

Dr. Stange: I never advise anybody to vaccinate unless he is in danger.

"I have noticed an item about exhibiting at our state fair that they would not allow any swine on the ground that were not vaccinated."

Dr. Stange: I have just heard that and do not know if it is a fact or not. There was some talk last year of forcing everybody to vaccinate. The idea would probably be to give them the serum alone to protect them while they were at the fair. That would protect them for from one to three weeks.

"Does the state law prohibit the private individual from using the simultaneous method?"

Dr. Stange: No, I do not think there is anything in the law to that effect. Any individual can send for the serum and use it. I think they advise a man to have a veterinarian do that work because you are dealing with disease producing material but it is not compulsory. There is nothing about the method but what any intelligent individual can do. Cleanliness is the main part of it and be sure that your serum is injected in sufficient quantities.

"Is immunity to hog cholera transmitted?"

Dr. Stange: No, not to any extent. They claim that when the sow is vaccinated in a late stage of pregnancy it is transmitted to some extent. When she has recovered from cholera before she becomes pregnant no immunity is transmitted.

EXPERT JUDGE ASSOCIATION.

The annual session of the National Association of Expert Swine Judges took place on Wednesday, June 12, on the day following the meeting of the Iowa Swine Breeders. In the absence of the presiding officers the chair was occupied by J. H. Watson. Secretary W. D. McTavish read the minutes of the previous meeting and made the usual reports, after which Prof. Curtiss made a brief talk in which he emphasised the importance of the score card in establishing and maintaining correct type and breed character.

Election of officers resulted in the selection of the following gentlemen:

President—R. J. Harding, Macedonia, Iowa.

First vice president—J. H. Watson, Madrid, Iowa.

Second vice president—Sam McKelvie, Lincoln, Nebraska.

Secretary and treasurer—R. W. Halford, Manning, Iowa.

A committee consisting of Messrs. R. J. Harding, R. W. Halford, L. C. Reese, Prescott, Iowa, and Prof. Curtiss, was appointed to formulate and present at the next annual meeting a report on change in the score card, and to revise and correct the detailed descriptions.

The examining committee having charge of the score card practice included R. J. Harding, J. M. Stewart, Ainsworth, Iowa, and Prof. Kennedy. Twelve men scored. The subjects provided were a Chester White sow, a Duroc Jersey sow, a Poland China sow, and a Berkshire boar. W. T. Barr, Ames, provided the Chester White. The others came from the college herds. The committee recommended that certificates be issued as follows:

On Duroc Jerseys—F. G. Paul, Marshalltown, Iowa, and G. E. Connell, Ames, Iowa.

On Berkshires—J. W. Ogle, Ames, Iowa, and G. E. Connell.

On Poland Chinas—J. W. Ogle.

On Chester Whites—None.

PART IX.

PROCEEDINGS

OF THE

Thitty-fifth Annual Convention

OF THE

IOWA STATE DAIRY ASSOCIATION

Held at Waterloo, Iowa

(In Conjunction with the Waterloo Dairy Cattle Congress)

OCTOBER 14-19, 1912

WEDNESDAY MORNING, OCTOBER 16.
CONVENTION AUDITORIUM.

President Young: Ladies and Gentlemen: We will now come to order. We will first have the invocation by Rev. W. F. Spry, of the First M. E. church.

(Invocation.)

The President: The address of welcome was to have been made by Mayor Thompson, of this city, but owing to his absence, City Attorney Kenyon will act in his stead.

Mr. Kenyon: Ladies and Gentlemen and Members of the Iowa State Dairy Association: I want to apologize to you for not coming here this morning prepared to welcome you in the way you should be, but I was only notified a few hours ago and have had no time to think of what I would say to you. Nevertheless, I am here to welcome you in behalf of the city of Waterloo, and no matter how I may express this welcome, I assure you it is most sincere. I am here as an agent of the mayor to turn over the proverbial keys to the city and to apprise you of the fact that our doors stand wide open. They were taken off their hinges and will not be replaced until next Sunday night. Waterloo has the reputation of being a convention city, and we hope that we will treat you this time in a way that will verify that reputation. I understand that this is your third consecutive meeting in our city, and I well remember your first dairy show three years ago. Certainly you have made a wonderful growth in these past three years and are to be congratulated for it. We, of Waterloo, like to see things grow and are proud with you for the showing of dairy cattle on exhibition in these grounds. Without question it is the greatest assembly of great cattle ever exhibited in the world.

We want you to enjoy yourselves while in our city, and will do everything in our power to make your stay with us pleasant and profitable. We want you to come again. Once more, in behalf of the city, I welcome you.

The Chairman: We all appreciate Mr. Kenyon's cordial welcome. Mr. C. A. Nelson, of Waverly, will respond.

Mr. Nelson: Members of the Iowa State Dairy Association: When city folks want things done these days they call on a farmer, so I was asked to respond to the address of welcome. I can say to Mr. Kenyon that we are glad to be back in Waterloo again, for we have not forgotten the hospitality which was extended to us at our previous conventions. I am a dairy cow enthusiast and love the dairy business, and when I was told that there were 160 tubs of butter sent here and that every tub scored 90 and above, with an average of 94, I am more proud than ever. Whoever saw such a showing of fine dairy cattle? Nobody ever has because a finer showing has never been made, and it is a great credit to the men of Waterloo who have made this possible. I remember about five years ago when the dairy cow was introduced into this convention at Cedar Rapids. That was the beginning of what we have here today. It is only going to be a few years until our land will be worth $500 per acre because of our good buttermakers, our good creameries and our good cows and the good people of Iowa.

We appreciate Waterloo's welcome. I am glad this city has given us this location and we are going to meet here from year to year and bring our cows. We want to show the people of Waterloo, the state of Iowa, and the world what we are doing. We like Waterloo because she knows how to make a farmer feel that he is one of the elements of the world. We are going to try and get out more farmers every year, because if we are going to do our best we must attend these meetings. Again, in behalf of this association, we thank the city of Waterloo for their hearty welcome and support.

The Chairman: We will now listen to the report of the secretary, Mr. J. J. Ross:

Mr. President, Members of the Iowa State Dairy Association, Ladies and Gentlemen: It is with pleasure that I wish to call your attention to my report for 1912, but before taking up the details of the report there is an apology due the members of the association, and that is that I had intended to give you my report for the year closing July first, 1912, in printed form but on account of some unavoidable reason the state printer has not got this work printed as yet and hence it will be necessary for me to tell you briefly some of the important business that has come to our attention since our last meeting. Your executive committee has held several meetings during the year. The first meeting was held at Des Moines, December 12th, 1911, and at that time we found it necessary to re-incorporate the Iowa State Dairy Association as the Secretary of State had notified me that our period of incorporated time had expired. The twenty years of existence expired December 1, 1911, and in consequence the committee called a special meeting of the Association and voted a renewal of corporate existence, and the following was adopted:

RENEWAL OF CORPORATE EXISTENCE OF THE IOWA STATE DAIRY ASSOCIATION.

Know all men by these presents:

That at a special meeting of the members of the Iowa State Dairy Association a corporation duly organized under the laws of the state of Iowa, held at the Chamberlain Hotel in the city of Des Moines, Iowa, on the 12th day of December, A. D. 1911, at two o'clock P. M., it was duly voted by the members present to extend the corporate existence of said corporation as shown below.

EXTENSION OF CORPORATE EXISTENCE.

It was duly voted by said members present at the special meeting as determined by the resolutions adopted, that the period of existence of said corporation be renewed and the corporate period continued for a term of twenty years, viz., to the first day of December, 1931.

The present officers of the association are as follows:

E. R. Shoemaker—President.
F. W. Stephenson—Vice-President,
F. L. Odell—Treasurer,
J. J. Ross—Secretary,

Who hold their office until the newly elected officers are qualified on January 1, 1912.

The newly elected officers who will qualify on January 1, 1912, are as follows:

R. B. Young—President.
L. L. Flickinger—Vice-President.
E. T. Sadler—Treasurer.
J. J. Ross—Secretary.

The Secretary, J. J. Ross, and W. B. Barney, who were present at said meeting were duly authorized and directed to sign, acknowledge, verify and record and do all things which are by law required to execute, complete and carry into effect the extension of corporate existence of said corporation.

We, W. B. Barney and J. J. Ross, members of said corporation and present at said special meeting, do hereby certify the above to be a true and correct statement of the proceedings of the members at the above named meeting and there were no votes cast in opposition to the extension of corporate existence of said corporation.

Attest:

In pursuance of the authority given us by the special meeting of the members set forth above, we, W. B. Barney and J. J. Ross, have executed this instrument and do hereby sign and acknowledge the same for and in behalf of the said corporation this 13th day of December, 1911.

W. B. BARNEY,
J. J. ROSS.

State of Iowa,
Polk county. ss.

Be it remembered that on the 13th day of December, A. D. 1911, before me a Notary Public in and for said county and state personally appeared W. B. Barney and J. J. Ross, each being to me personally known, who, being duly sworn did say that said instrument was signed and sealed in behalf of said corporation by authority of its members, and that they acknowledge said instrument to be the voluntary act and deed of said corporation by them voluntarily executed.

RUTH WOODRUFF,
Notary Public.

This business was the most important subject before this meeting and the next meeting was held at Des Moines on April 3, 1912, for the purpose of determining the time and place for the 1912 convention. Several applications and invitations were read before the committee, one from Cedar Rapids, one from Des Moines and one from Waterloo. After discussing the different offers your committee decided unanimously to accept the invitation from Waterloo and the Dairy Cattle Congress and, gentlemen, I am sure that after looking over the exhibits and buildings that Waterloo has provided for our comfort that you will agree with me that the committee made a wise selection. The Iowa State Dairy Association has never in its history had such a welcome and such a commodious place to hold a convention, and I think that the association is to be congratulated upon having these fine conveniences, and if this meeting is not a success certainly it will not be the fault of the committee nor the city of Waterloo.

I would like to call your attention at this time to some of the things that have been accomplished by the State Dairy Expert and his Assistant. I believe that there has never been a year that has shown such great advancement in the upbuilding of dairying in the state as has been accomplished during the last year, and this advancement is largely due to the untiring efforts of Mr. Van Pelt and his assistant, Mr. E. S. Estel. Mr. Van Pelt retired from office on July 1st and Mr. Estel was elected to the office of State Dairy Expert by the state dairy board. In view of the fact that there is such a good work being done through the expert's office it is self evident that each and every member of the Iowa State Dairy Association should get busy and do all that he can to try and get this appropriation increased at the next session of our legislature. I would like to see a bill introduced for $15,000 for this work in place of $7,500, the amount appropriated at the present biennial period, and I believe that were such a bill introduced we could get it passed if all our members would urge our respective representatives and senators to support such a bill. Now my advice to you members is to boost all that you possibly can next winter when the legislature is in session.

I want to especially thank the buttermakers of the state for so liberally contributing their exhibit of butter to this meeting. I can truthfully say that I have never seen such a nice lot of packages exhibited to any convention and I might further add and I believe that the judges will bear me out in this that I have never seen a better lot of butter exhibited at a contest. I want to say to the buttermakers of Iowa that if you keep up this good work that you are sure to land the banner at our next National Creamery Buttermakers Association.

I also desire at this time to thank the commission houses and business houses of all kinds who have so liberally supported me in trying to make this meeting a success, and now as the time is rather limited this morning I will close. I thank you for your kind attention.

The Chairman: We will next listen to the report of the treasurer, Mr. E. T. Sadler:

TREASURER'S REPORT.

RECEIPTS.

Jan. 12, 1912—Received from Ex-Treasurer Odell..	$ 554.04
Apr. 2, 1912—Dairy Cattle Congress, with interest	1,030.00
Apr. 6, 1912—Cedar Rapids Savings Bank, interest	22.98
Jun. 15, 1912—Memberships by Estel	10.00
Jun. 22, 1912—Memberships by Estel	16.00
July 1, 1912—Memberships by Estel	8.00
Aug. 17, 1912—Membership by Estel	28.00

Sept. 12, 1912—Memberships by Estel	33.00
Oct. 22, 1912—Standard Oil Co., premium fund	10.00
Jacob Jacobsen, Chicago	5.00
Gude Bros., Kieffer Co., New York	10.00
Enyard & Godley, New York	10.00
Diamond Crystal Salt Co	10.00
Total receipts	$ 1,747.02

DISBURSEMENTS.

Feb. 1, 1912—Kimball's Dairy Farmer Co., subs.	$ 18.75	
Fred L. Kimball Co., printing	19.25	
H. D. Fairall, signs	1.80	
Feb. 5, 1912—Hugh G. Van Pelt, salary for Jan.	41.66	
Mar. 2, 1912—Hugh G. Van Pelt, salary for Feb.	41.66	
Apr. 1, 1912—J. S. Anderson & Son, bond premium	12.00	
Apr. 3, 1912—W. L. Brown, Chamberlain Hotel, expense executive meeting	7.40	
Apr. 4, 1912—Hugh G. Van Pelt, salary for March	41.66	
Apr. 6, 1912—Waterloo Office & Supply Co., cash book and file	1.75	
May 1, 1912—Colby-Parker Co., express on butter, 1911 convention	1.35	
May 7, 1912—Postal Telegraph Co., telegram to Cong & Sons	7.80	
May 20, 1912—Iowa Register & Farmer, 74 subs. at 25 cents	18.50	
Fred L. Kimball Co., 85 proofs, C. J. article	4.75	
May 9, 1912—Hugh C. Van Pelt, salary for April.	41.66	
May 20, 1912—E. R. Shoemaker, expense to Des Moines	8.15	
May 21, 1912—Ellis Hotel, Sasseen's expense	13.82	
Jun. 10, 1912—E. T. Sadler, executive committee expense	10.00	
Jun. 12, 1912—L. L. Flickinger, executive committee expense	16.80	
Jun. 21, 1912—E. R. Shoemaker, traveling expense	11.69	
July 2, 1912—Moore & Moore, invoice, June 1, 1912	2.90	
July 15, 1912—Iowa Register & Farmer, subs. for premiums	1.75	
Sept. 7, 1912—Iowa Register & Farmer, subs. for premiums	1.00	
Sept. 11, 1912—Fred L. Kimball Co., stamps, mailing, etc.	19.40	
Sept. 16, 1912—Bastian Bros. Co., 1912 fobs	55.39	
Total		$ 400.89
Balance on hand October 1, 1912		$ 1,346.13

The Chairman: I will appoint on the resolution committee, Hon. W. B. Barney, J. C. Joslin and L. S. Edwards; auditing committee, Guy Thomas and Erve Cole. The legislative committee will remain the same as last year, as follows: E. R. Shoemaker, chairman, W. W. Marsh, Hon. W. B. Newberry.

It is a pleasure to introduce to members of this association again, Prof. Carl E. Lee, of Madison, Wis., who will talk to us on the subject of ''Value of Workmanship in Making Butter.''

WORKMANSHIP AS A FACTOR IN CREAMERY BUTTERMAKING.

BY CARL E. LEE.

The quality of the butter manufactured in Iowa some ten years ago was governed more by the condition of the milk received than by the methods employed by the factory operator. The quality of the milk produced in those days was much better than the average grade of cream now being handled.

The market standard has not advanced, consequently there must have been a decrease in the quality of creamery butter as a whole. It is known that there are lines of butter today that are fully as good as have ever been seen in our markets. It is also generally understood from what factories they come. This kind of butter receives no criticism from dealers or consumers regardless of the standard of the present or the past.

The one outstanding factor that has had more to do with the quality of butter is the change in the condition of the raw material delivered to the creameries. The farmer who prefers to skim his milk and deliver the cream should understand that, if the quality of his cream is injured before it is delivered, it means a reduction in the flavor of the butter made from it. Buttermakers put forth an equal, if not a greater, effort today for good butter than they ever did. The result is already noticeable. Last June a commission man who handles a great deal of butter made the statement, "We are getting a better grade of butter this year as compared with a year ago." In some cases the improvement has been slight even if the buttermaker has done his best. As an illustration, a Wisconsin man has for the last eighteen months sent butter to the scoring exhibitions. His butter has received an average score of 90.7, with four scores 91 to 92.50 and five tubs scoring under 90. As a whole the workmanship of his butter has been fairly good. It is therefore not justice to this man to ask why he is not making butter of higher quality. It is encouraging to note that the five tubs entered from May to September last year received an average score of 90.2 as compared with 91.6 for the same months this year. An increase of 1.4 points is sufficient to encourage the operator to greater efficiency in the future.

BUTTERMAKER MUST BE A LIVE WIRE.

Last April a creamery owner made this remark, "Any buttermaker should be able in six weeks to work an influence in a community that will result in a better grade of cream being produced." At first thought this statement would seem out of place because results, as a rule, are not brought about in so short a time. A buttermaker when asked if he could not get his patrons to deliver the cream oftener and in better condition replied, "The owner of the factory does not want me to say anything to the farmers regarding the quality of the cream, because if I did, they might go to a neighboring factory." The average cream producer is not that kind of a man. There are few who will not do what is requested of them, if the proper methods are used. The owner of this creamery had better lose half of his patrons than to produce the kind of butter that his maker sent to be scored.

It may not be possible for every factory operator to bring about a complete reform in six weeks, but if he has had no influence for a better grade of raw material he has not done his part.

The first exhibit sent by a progressive buttermaker who operated a co-operative factory for several years scored 89.33 and his twenty-ninth tub scored 97 with an average score on nine exhibits for his last year in that factory of 94.07. A month ago he sent the following letter:

"Just received your letter of the 20th and was very glad to hear from you again. As you will probably remember, I have been out of the race since last January but could not keep out any longer. I consider that contest the most interesting part of the buttermaking business and intend to be a regular exhibitor from now on. I started making butter here on April 15th and might say that I had everything to contend with. The largest portion of our cream at that time was very poor. Hauling once a week was considered sufficient by most of the farmers. A few even had the idea that once in two weeks was all right. It certainly took a great deal of effort and patience to change conditions, but I am now getting results. The cream is of fairly good quality. Over half of my patrons haul every other day and none less than twice per week. Quite a few first class milk houses went up this summer and a few silos. We have carried an ad, or in other words, have had articles every week in our local paper on 'The Necessity of Producing a First Class Quality of Cream.' This brought good results. We pasteurize all of the cream and then use lots of good starter. I find that by doing so our butter is cleaner and sweeter in flavor. It keeps much better. It is safe to say this system nets us one and one-half cents per pound.

"The loss of fat in the butter-milk is a little more than by churning raw cream but I am ahead by pasteurizing. All of the butter is printed and sells for the top price. Grading the cream has probably done more good than anything else. It was difficult at first to make this clear to the farmers but it soon wore off and now they very seldom remark about it. I had the hardest time to get milk for starter, although I offered eight cents above Elgin for butter-fat and gave them butter-milk in return free of charge. It is now bought for three above Elgin and I get all the good milk needed. You may look for a score close to 95 from here at the International Dairy Show. I don't believe that I have forgotten how, if I can get the goods to make it from."

If ten per cent of the buttermakers could look back over less than a half year's work with the same kind of a record, no one could predict the result on the quality of butter.

Another man said, "I am making better butter today out of farm skimmed cream than I did three years ago from nearly whole-milk." I can only add, "The future quality of butter will in a large measure depend upon how many factory operators are live wires for good cream in their respective communities. It is not a question of the other party getting some of the cream. Quality of the butter should count."

MORE EFFICIENT WORK.

The buttermakers operating factories today are a better trained class of workmen than they were a few years ago. There are at present more agencies at work to assist the men which no doubt have had their effect in stimulating better methods. If the factory operators of Iowa should receive the same kind of raw material as was produced in Jones county of this state when I was one of the buttermakers, the heading on the last column of the first page of Chicago Dairy Produce, September 24, 1912, would read "butter is scarce" instead of "fine butter is scarce." The change in making butter from whole-milk to that of partly farm skimmed cream had its beginning in eastern Iowa 10 years ago. Today it is a territory of nearly all farm skimmed cream. What is true of this section is probably true of a large portion of the state. The conditions are the same in Wisconsin. Bulletin 140 on "The Development of Factory Dairying in Wisconsin, 1906" referred to the introduction of the hand separator as being one of the direct causes of the decrease in the number of creameries This would indicate that the making of butter from farm skimmed cream had its beginning prior to 1906. Bulletin 210, "Progress of the Dairy Industry in Wisconsin, 1911," states from data furnished by the dairy and food commission that out of the 1,005 creameries in the state, the 955 that reported whether they used whole milk, cream or both, only 86 reported that they made butter from whole-milk.

For the scoring exhibition year in Wisconsin, which began in May, 1907, 29.2 per cent of the men who reported the kind of raw material used made the butter from whole-milk, while only 12.7 per cent of the men who reported five years later were in the whole-milk class. Five years ago only 23.5 per cent of the men used farm skimmed cream as against 55.7 per cent for last year. This shows that Wisconsin is today a state where butter is manufactured very largely from farm skimmed cream. No doubt the change in the future will not be so rapid because the factories that receive nothing but whole-milk are located in the southeastern portion of the state where some of the milk and cream is at times shipped to Milwaukee and Chicago.

QUALITY OF BUTTER HAS IMPROVED.

During the past few years there has been a marked improvement in the quality of the butter manufactured in Wisconsin regardless of the kind of raw material used. Word has been received from men stating, "On account of the record I made last year on the quality of our butter we have been able to make a contract this year that is a substantial increase over last year." Three years ago 21.5 per cent of the men sending tubs of butter to the Wisconsin scoring exhibitions who reported the kind of raw material used, made butter from whole-milk with an average score of 92.73, while last year the average score in the whole-milk class was 94.03. Three years ago the average score in the milk and cream class, which was 49.1 per cent of all the exhibits made by men who reported, was 92.31 and last year 93.11, while three years ago the average score on butter made from farm skimmed cream only was 91.24 and last year 92.04. This shows conclusively that the men who are making butter from farm skimmed cream are on an average putting out a better article than three or even four years ago.

This higher quality of butter can in part be explained by extra efforts being put forth by the factory operators for a better grade of raw material together with a higher grade of workmanship in the factories.

SCORING EXHIBITION WORK HAS IMPROVED THE WORKMANSHIP OF WISCONSIN BUTTER.

It has always been the policy of the scoring exhibition work in Wisconsin to aid the buttermakers whenever possible in their methods of operation. A great deal has been accomplished with reference to the flavor of the butter put out by several of the creameries. When this has been done it has been accomplished through the co-operation of the buttermaker.

If the butter from a certain factory has contained an excessive amount of water for a certain month and the party who made that butter has filled out his method blank, it has been possible in nearly every case to locate the cause for the high water content of the butter. This has been equally true with reference to the defects in body, color or salt. One man who sent his first exhibit to the scoring exhibitions last April sent his fifth exhibit to the state fair. This last exhibit was cut one point in color on account of mottles. His method blank showed clearly that the butter had not been worked sufficiently. Another man who had been a regular exhibitor had trouble with mottled butter in July. The cause for it was located when the man wrote, "Lately I have been adding crushed ice to the cream in the churn when the granules begin to form." This man did not change the method of working the butter to meet the change in handling the churn.

In June, 1909, 66.1 per cent of the butter sent to the scoring exhibition in Wisconsin was defective in body. The following year 23 per cent and for last year only 12.9 per cent of the butter was lowered in score on account of not having a perfect body. Three years ago 33 per cent of the butter was defective in color, the following year 5.8 per cent and one year ago 5.5 per cent of the butter received a cut in score on account of mottled or wavy color. When all three years of the exhibition work are considered we find that for the twelve months beginning May, 1909, 38 per cent of the butter was defective in body, the following year 13.3 per cent and last year 11.3 per cent; and for the color three years ago 30.5 per cent of the butter was defective, the following year 5.9 per cent and last year

12.9 per cent. The defects in salt were, for 1909, 6.7 per cent; 1910, 7.7 per cent and 1911, 8.4 per cent. This is a remarkable showing as to what the buttermakers can do. They have studied their conditions and when changes were necessary they have made them for the good of the butter.

Another striking example was brought out by the recent scoring of the Wisconsin state fair butter, where there were 150 different tubs of butter made by men who have taken advantage of the scoring exhibitions and some who have never exhibited at the dairy school.

The men who have never sent butter to be scored entered butter at the state fair, 48.6 per cent of which was either cut in score or else criticized as being defective in workmanship; 30.3 per cent of their butter was lowered in score because the body, color or the condition of the salt was not perfect. While the butter made by men who have sent butter to Madison since May of this year showed a much better workmanship because only 16.4 per cent was lowered in score on account of a slight cut due to imperfect workmanship.

WEATHER CONDITIONS AFFECT QUALITY.

Since a very large percentage of the butter made in either Iowa, Wisconsin or Minnesota contains either all or a large amount of farm skimmed cream, it is natural that the butter made during the summer months does not grade very much if any higher than the butter made during the winter because of the condition of the cream. The warm weather naturally has a tendency to flavor cream with high acid and other taints. This condition is not found when the butter is made from whole-milk, and it is expected that butter of a higher quality should be made during the season when feed and natural conditions favor the production of good clean milk.

There was a total of thirty-nine men who have sent butter to the scoring exhibitions conducted by the department of dairy husbandry, College of Agriculture, University of Wisconsin, for each of the months of May, June, July, August and September. The average score for May was 93.54; June, 93.29; July, 93.34; August, 93 and September, 92.95. When the butter for the last two months was made the weather in Wisconsin was very warm. It does not seem possible that anything but the condition of the raw material when delivered to those thirty-nine different creameries made the average difference in the quality of the butter made in May and September of this year. Nearly all of these same men attempt to make butter having as good a quality as is possible for them to make considering the raw material they receive.

ACCURACY OF WORK WILL COUNT.

In factory operation the one thing that will have more of a tendency than any other to bring the buttermaker and patrons together is the accuracy in the operation of the Babcock test. The buttermaker who is always free to show to the farmers how the test is made and finds them ready to listen to his side of the story, is well paid for the time so spent. On August 28, 1912, a letter was received from a former Wisconsin student who is manager of a factory. It read in part as follows: "We have of late had some complaints on cream tests by the patrons who deliver cream to our factory, and for the past two weeks I have been testing with our buttermaker to see how he did things and to learn if there were any faults at our end. During my testing I made several notes on which I should very much appreciate your advice. 1. We test the samples every day. The wagons get in late, consequently the samples after being warmed to 130-160 degrees are weighed up at once and placed in the refrigerator to remain over night. The following morning these samples are re-warmed and some warm water is added to the bottles before adding the acid. Will this method materially affect the test? 2. We usually add the acid to all of the bottles before mixing the acid and the cream. Would any better results be obtained if the acid and cream were mixed as soon as the acid is added? We usually obtain a clear reading and have a smaller proportion of burned samples when the acid is not mixed with the cream until the acid is added to all of the bottles. 3. At times there is a small amount of black at the bottom of the test. Would adding more water to the cream before pouring the acid help to remove this? We have not usually found it so. Our acid would seem too strong and I am trying to get our buttermaker to cut down the amount used. Is this a mistake? 4. We read the samples directly out of the tester. Would it be better to put them in a hot water bath? Would the greater accuracy warrant our securing an equipment? 5. Do you think it good policy to urge the farmers to use hand testers to check up for their own satisfaction, or do you think that the lack of experience in operating the testers would cause a variation in their reading and we would thus have constant disputes with them?"

The above questions are important from the viewpoint of factory operation and this man has found problems that confront a large number of creamery buttermakers. It is not necessary for me to give the whole text of my reply. Results obtained should be the same whether the tests are completed at once or allowed to stand over night providing care is exercised in removing the cream adhering to the inside of the neck of the bottle. No doubt it is best to re-warm the samples to a temperature of 60 the following morning when samples are held but in no case should the hot water be added. It is not a question whether the acid and cream is mixed at once in each bottle as compared with the shaking of the 24 bottles at once. Accurate results are obtained by both methods. The reason why this man had clear tests when the acid was added to all of the bottles before mixing was probably due to the acid being a trifle strong or else the cream re-warmed to too high temperature, consequently when the acid and cream were mixed at once the bottles would stand longer before being whirled, hence a greater action of the acid upon the butter-fat. The problem in this letter and to every operator is that of working out a system that will always give results that are uniform and consistent. There should not be a single factory in Iowa or any other state where cream tests are made where the buttermaker reads the tests directly out of the tester. The hot water bath will always insure the tests being read at a uniform temperature. This is not the case where the tests are read out of the tester. The first bottle is apt to be of a much higher temperature than the last one.

After this man had put into practice the suggestions offered in my letter he wrote, "We are following your outline and the tests are running much better."

WORKMANSHIP OF BUTTER MUST COUNT.

As has been pointed out the buttermakers who have studied their conditions and made use of every opportunity offered have improved in workmanship. It is natural that butter having a fine texture and color together with the proper amount of salt to bring out the flavor is a much more desirable article than a line of butter that is defective in these points.

The buttermaker in charge of a factory equipped with a ripener and plenty of cold water and ice has no excuse to offer for making butter that has not a firm waxy body. At certain seasons it is rather difficult to secure this, but it can be controlled if the temperature of the cream when churned, the length of time it is held cold and the temperature of the wash water are regulated to meet those changing conditions.

When the butter has the desired degree of firmness during working one need not fear that five or six revolutions of the worker above normal for working is going to injure the texture. A churning of 200 pounds as compared with 800 pounds of butter in the same churn will require more working. The same is true of two lots of butter having different temperature while working. If a change of five degrees is made in the temperature of the butter from one day to another or two churnings on the same day, the number of revolutions the butter is worked cannot be the same.

UNIFORM COLOR CAN BE CONTROLLED.

The following letter was received a few days ago from a commission firm: "One of our regular shippers has had considerable trouble for several months past with mottled butter and we have written him about all we knew as to the cause of this and what to do to correct it, but he has been unsuccessful and shipment which we received today is what you would call 'blotched' in color. It is too bad that one making quality that is most always fine should have butter affected in this way which means considerable loss, so we have written him that you would write in reference to this and give him all the suggestions and information that you had."

This is an illustration of the kind of butter that is sometimes found on the market. This firm's method should be commended. They have previously placed the dairy school in touch with factory operators who have needed assistance. It is difficult to sell butter that is mottled or defective in color. The man who makes that kind of butter is responsible for it. It is not the fault of the milk or cream or churn used. It is not dependent upon whether butter is colored or uncolored but upon the uniformity of the component parts of salted butter.

During the fall and winter months the temperature of the factory is not uniform nor is the length of time from washing the butter to working always the same, consequently the butter is not worked the same when a definite number of revolutions for working is adhered to. If every buttermaker would use a trier and examine the butter twenty-four hours after it is worked there would be less mottled butter in the markets.

BUTTER SHOULD HAVE A UNIFORM SALT CONTENT.

There has been an increase in the defects due to over-salting but they are not always found in butter from the same factory. The larger creameries, even if the butter has not the quality found in butter made in a large number of the smaller factories, have the advantage in pleasing the trade because of a more uniform product. The consumer as a rule has a definite idea regarding the kind of butter desired. A line of butter is not going to give the satisfaction that it should if the salt content varies greatly from day to day. In factories where there is not a uniformity in the per cent of fat in the cream or in the temperature of the cream when churned there will naturally be a difference in the size of the butter granules. This will influence the amount of salt that must be used to obtain the same results. The other factors that must be considered are amount of water in the churn, size of churning and per cent of water in the finished butter.

Butter should not be over-salted to the extent of leaving it gritty.

The future of Iowa butter as to quality will depend largely upon the care the farmers give the cream before it is delivered. The buttermaker may do his part as to workmanship but the stability of the consumer for butter labeled "Made in Iowa" handled by the commission trade will never stand if it is built upon butter made from renovated cream.

The cream producers can assist in holding up the quality of butter by producing cream free from taints and containing from 30 to 40 per cent butter-fat. Do not heed the man who claims that good butter can be made from cream one week old.

DISCUSSION.

Member: I would like to ask Prof. Lee if tubs have anything to do with mottled butter.

Prof. Lee: No. The churn has something to do with it. All churns are not alike and you have to work your butter according to the churn you use. You have to study your conditions.

Member: Does the temperature of the salt and the wash water have anything to do with mottles?

Prof. Lee: The temperature of the salt has in an indirect way. The temperature of the wash water has nothing to do with it, neither does the temperature of the cream. The buttermaker must study his conditions and work accordingly. Our butter is not uniform enough. One churning may have 5 per cent salt and the next one only 1 per cent. It is just as important to know what our salt content is as it is to know the moisture content.

Member: How about shrinkage? How much should properly made butter ought to shrink?

Prof. Lee: There is very little shrinkage in butter between the creamery and the market. The shrinkage is due to the system of weighing butter. I think the buttermakers of the country ought to demand a change in the system of weighing butter at the receiving end.

WEDNESDAY AFTERNOON.

The Chairman: The subject of gasoline engines for creamery power is receiving a good deal of attention lately, and as Mr. Sadler has been making quite extensive experiments in his creameries we have asked him to address us on this subject.

POWER EFFICIENCY.

BY E. T. SADLER, WATERLOO, IOWA.

When I began my experiment with the gasoline engine and small boiler combination as a means of reducing the power cost in the creamery I did it for two reasons. One was to cut my own expense in two and the other was to have practical experience and data to offer Creamery Journal readers that they may benefit by it if they desire.

My article in last September's Creamery Journal, while it was rather incomplete, started a great many creamerymen to thinking, and as soon as they gave the matter serious thought the conclusion was to reduce their expense. I received dozens and dozens of inquiries from all over the country asking for information and suggestions. Several carried out their intentions and are today shoveling less than half the amount of coal they did before and getting entirely satisfactory results.

In order to get results with a small boiler and gasoline engine they must be managed right, and before they will be managed right the buttermaker must be in sympathy with the proposition and give it his cooperation. Unless he does there is no use making the change. They will complain that the engine isn't large enough; that there is never sufficient steam; that this, that and the other thing is wrong. Nine times out of ten it is the buttermaker and not the boiler or engine.

Ever since the advent of factory buttermaking every creamery has been equipped with mogul engines and boilers to handle three or four separators, a churn, starter can and pump. Buttermakers have become accustomed to having enough steam all the time so they could leave the steam hose open for an hour if they wanted to, or let the valves, unions, etc., leak. I have been in creameries where there was enough steam escaping through leaky pipes to run the engine had it been properly confined. The object of a small boiler is to reduce the amount of steam and in turn the amount of fuel burned. Therefore, to make your power plant efficient you must utilize every pound of steam generated. Make every ounce of steam do its share of the work to be done. This can't be accomplished with valves and unions leaking They must be absolutely tight. In a whole-milk creamery where there is skim-milk to pasteurize, live steam will have to be used. I had a fellow say to me: "By using a steam engine and big boiler, there is exhaust steam enough to pasteurize the skim-milk, and I can't see where I would be anything ahead to use a small boiler and have to use live steam." He was firing a 20-horse boiler, running a 15-horse engine and his machinery consisted of two separators, churn, ripener, etc. That idea (he said some salesman showed him where he was saving money by using exhaust steam to pasteurize his skim-milk) is costing that man at least $15.00 a month, and he thinks he is saving money. He bought a new 20-horse boiler instead of a 10.

Now I am not trying to beat the supply houses out of bigger sales. I am simply showing what can be done and what eventually everybody is going to be doing. In a proposition like this, on one side comes the advice to put in smaller power equipment and on the other side the advice is to buy larger boilers and engines. I am not personally interested in the matter one way or the other, but the mission of a paper like the Creamery Journal is to be of assistance to its readers. I have and am practically demonstrating every day in three creameries under my own direction that it is possible to reduce the fuel bill 50 per cent and still obtain necessary results.

At the Deerfield (Iowa) creamery we have a 6-horse engine and a 3-horse upright boiler. During April we manufactured 5,880 pounds of butter with twenty gallons of gasoline at ten cents, and $4 worth of coal, or a total cost for steam and power of $6. The plant is seven miles in the country and the $4 included the cost of hauling the coal from the town. This is a gathered cream plant. The cream was heated to seventy degrees and held about three hours, then cooled to fifty-three. The engine was in use about an hour and a half for heating and cooling, then about three hours the next day for churning and working. We do not pasteurize the cream. For pasteurization it would take a larger boiler.

At the Dewar plant we have a 10-horse boiler and a 6-horse gasoline engine. We operate three 2,500-pound separators, a 700-pound churn, ripener, starter can, pump, etc. We churn and separate with the 6-horse engine, and have a small 1½ horse engine which we use for cooling. During April we handled about 5,000 pounds of milk per day, pasteurized the starter and skim-milk, heated the milk before separation, heated water for cleaning purposes and operated the tester with 160 pounds of coal per day. The coal cost $4 per ton, or twenty cents per 100 pounds, or a total cost of thirty-two cents per day. The two engines consumed on an average of twenty cents worth of gasoline per day, or a total cost for fuel of fifty-two cents, which amounted to $15.60 for thirty days. With our old power plant—a 20-horse boiler and a 20-horse engine—the cost for practically the same amount of milk was $39.40. At that time it took 100 pounds of coal per day just to bank the fire.

When we first connected the 10-horse boiler we were unable to keep up steam, but as soon as all the leaks were stopped, the pipe leading to the skim-milk tank covered with asbestos to prevent condensation, we had no trouble whatever. We found that by having 100 pounds of steam up before starting that it not only required less fuel but less attention. The more pressure there is to steam the more efficient it is. To be sure, a small boiler requires more attention, but not so much as to be impractical. Mr. Edwards goes out to the creamery in the morning, gets his churning started, and has up steam by the time he is ready for it, thus saving fuel and time.

In creameries where the building is heated in the winter by steam radiators, the steam must be kept up all the time and the small boiler would not be practical. But there are hundreds of small plants like the one at Dewar where a stove is used for heating purposes. I am not recommending this combination as being practical in all cases, but expect managers to use judgment in comparing their plants with the ones which I have mentioned.

It will be obvious to all that we could handle 10,000 pounds of milk with a small increase in cost over that required for 5,000.

I am not alone in my enthusiasm over this economical and efficient power plant. Every place where they are used nothing but satisfaction is expressed and not one would consider going back to the big boiler and steam engine.

R. B. Young, president of the Iowa State Dairy Association and manager of the Buffalo Center Farmers' Creamery Company, writes that they have installed the gasoline engine and small boiler combination and have reduced their cost more than 50 per cent. Ask him whether he would go back to the expensive method.

C. N. Hart, president of the Iowa Buttermakers' Association and the buttermaker for the Plymouth Co-Operative Creamery Company, writes under date of May 13th:

"We have changed our power from steam to gasoline and have been using the latter since the 5th of April. We are well pleased with the change. We installed a 6-horse Economist boiler and a 10-horse gasoline engine, and our fuel bill for the first month will not exceed $8.50. Our make during that time was fifty tubs of butter per week."

The writer read a paper on this subject at the Waterloo and Green Bay conventions and in both places my conclusions were verified by different buttermakers who were using gasoline power.

B. T. Soles, of Fern, Iowa, is an enthusiastic user of the gasoline engine and small boiler combination. In a recent interview, he told me that he made 228 tubs of butter with fifty-two gallons of gasoline. He operates two deep-well pumps, one 300-gallon Wizard and one 600-gallon Wizard ripener and a 900-pound churn with a twelve-horse gasoline engine and an eight-horse boiler. He ran his engine an average of nine hours per day. Thus you will see that his power for manufacturing 14,136 pounds of butter cost $6.24. He did not know just how much coal he burned in the little boiler, but said it was a very small amount. He volunteered the information that they paid $500 for the engine and boiler and that they saved the price of them the first twelve months they were operated over what it cost them to run the big boiler and steam engine. He further stated that the secretary of his creamery said they would be money ahead if they had to buy a new engine and boiler every two years, and the figures gave him ample backing in that statement. Mr. Soles remarked that he would hate to go back in a creamery where he had to operate a big boiler and steam engine.

This is only one of many instances I could cite you to where the gasoline engine and small boiler combination is proving just as successful.

As another evidence that I do not stand alone in my recommendations for the gasoline engine, I quote the following from F. E. Willoughby, who has made extensive investigations along this line. He writes:

"The chief difference between the creameryman who succeeds and the one who does not, is this: The successful creamery man is forever seeking newer and more efficient methods of operating his plant. The unsuccessful one is generally obsessed with the idea that he is too busy and can't afford to waste his time on what he considers (because he has not taken time to investigate) impractical and vagarious.

"There always have been, and probably always will be, men who can flash up fifty-seven reasons why a thing can't be done. Watt was wasting his time; Stephenson, Fulton, McCormick, Edison and Marconi were 'impractical,' according to the men who have always had fifty-seven can'ts on tap. Nevertheless, while the can'ters can'ted, these great men did the things that count.

"There are probably fifty-seven good 'can'ts' why a gasoline engine is not adapted for use in a creamery. We have heard them all. The evidence of the value or adaptability of any machine is its behavior in practice, all the can'ts in the world to the contrary, notwithstanding. The proof of the pudding is in the eating. Not only can the gasoline engine be used in the creamery and effect a big saving but it is being done. In actual service the gasoline engine has demonstrated that its use in the creamery means a saving of fuel, labor and time. In reply to an inquiry sent out, one creamery man, who is operating three plants and using .gasoline engines in all of them, says, after enumerating a number of the advantages of the gasoline over the steam engine: 'The advantages are so many that it would take me too long to explain them all here.'

"Another writes, regarding an 8 H. P. gasoline engine he is using: 'I use it for all my creamery power, except running the turbine tester. I churn, separate, pump and run the power ripener with it. Also can make ice cream with it as power. I save about an hour mornings, as we do not have to wait to get up steam before churning. I have a boiler for heating water, but only need a small amount of steam and so use little coal, except for heating in winter. I find coal and gasoline bills together are less than two-thirds what my coal bill alone was when I used steam. We have to use power for an hour or two evenings in cooling and tempering the cream, but do not need to keep a head of steam for this purpose, now that we have the gasoline engine. When its work is done we shut it off, and there is no waste, as in the case of steam. I find this engine will carry two churns and the separator and pump without slowing the speed, while a load of this kind with my 10 H. P. steam engine would materially check the speed, unless I had a heavy head of steam.' "

Again I quote from the bulletin recently sent out by the Minnesota State Creamery, at Albert Lea:

"The gasoline engine for creamery or cheese factory use is attracting considerable attention now, and there can be no doubt but that it is more economical than steam in a great many creameries. The creameries that receive hand separator cream only will find that by using a gasoline engine and a smaller boiler their fuel bill will be materially reduced. The size of the gasoline engine that is necessary will vary from six to ten horsepower, and the boiler used in connection with it would vary in size from eight to twenty horsepower. The size of the gasoline engine needed will depend on the amount of machinery used in the creamery, while the size of the boiler needed will depend on whether cream is pasteurized or not. It is, however, best to install a boiler large enough to take care of any increase in business for some time to come.

"It is always advisable to buy a horizontal boiler, even though it is of small size, as it is more economical than is an upright boiler.

"In the whole-milk creamery it is best to continue using the steam engine, as it is a little more dependable where the farmer has to wait for his skim-milk, and then considerable steam is used for heating the skim-milk and the exhaust from the steam engine can be used for this purpose. There are, however, some creameries handling whole milk that use gasoline power with good results."

Regarding the danger of gasoline odor tainting the butter. To be sure it will, if the fumes are exposed to the cream and are in the work room, but it is no more necessary than getting separator oil in your cream. All you need to do is to keep it out. At Dewar we operated our engine for three or four months within three feet of the cream vat, piping the exhaust up through the roof. We did this because at that time there was no other place for it. We experienced some trouble with gasoline taints, but we now have it in a room by itself and there is absolutely no odor and we have no more trouble.

As to the dependability of the gasoline engine, Mr. Edwards has experienced trouble but once, and that was soon overcome without delay to the farmers. You must supply your engine with gasoline and sparks, and as long as you do that your engine will run. Occasionally some little casting will wear out, but it is quickly replaced. We have a friction clutch, operated from the work room by a lever.

The question of whether a gasoline engine and small boiler is economical for your creamery is up to you to decide. When you begin thinking of a change there will be several who will discourage the idea. Simply accept practical facts and decide for yourself, as you are the one who is burning the coal.

I will be very glad to answer any inquiries I can regarding the size of engine, boiler, etc., and to help anyone who wants to reduce their power cost.

The time is coming—yes, it is at hand, when our creameries must be more efficient, and the first place to begin working for efficiency is at the power plant. Every other phase of butter-making has advanced with twentieth century progress.

If you are progressive, investigate your system of furnishing steam and power.

The Chairman: We will next listen to an address on "Starters" by Mr. T. E. Culp, of Lincoln, Neb.

COMMERCIAL STARTER.

BY T. E. CULP, LINCOLN, NEB.

The buttermaker of today has no other work that requires so much observation and practice combined with good common sense as the preparation of the starter. During the last few years the use of a commercial starter in the creamery has become indispensable in the manufacture of a first grade butter. A greater knowledge of the use and cultivation of lactic acid fermentations is not only considered advisable but essential in modern dairy education. In proportion as we gain a knowledge of the use of a lactic ferment culture in buttermaking do our methods readjust themselves to changed conditions and tastes. Even with this later knowledge of manufacture there are times when the quality of our butter is not as palatable as it might be. This to a degree is due to a lack of knowledge of the flavor producing organism known as the lactic acid bacteria of plant. The lactic acid producing germ, under normal conditions and temperatures, is the buttermaker's best friend. By its proper use abnormal fermentations affecting the quality of butter may readily be prevented and the desirable flavors insured in the finished product.

Diverse methods of handling and ripening of cream have been tried, but none of these so far has proven as successful as the use of a pure commercial starter. Lactic acid acts as a germicide on obnoxious germs and prevents the development of bad flavors and taints common in cream or milk, thus its value can not be over-estimated.

The first step to be considered in the manufacture of starter would naturally be the selection of the milk to be inoculated. This in itself is one of the most important steps and requires close study. In the selection of a good milk several things must be taken into consideration. First, to obtain the proper results it is quite necessary to use only the cleanest, sweetest and freshest milk from a healthy herd. Milk from the same cow varies in character to such an extent that the closest attention in examining the milk from day to day is required to insure the best results. Again, the surroundings during the milking operation should be closely protected against the many varieties of bacteria. Many of the changes of these undesirables are so complex that they can not be discussed in a paper of this nature. The fats are little affected by the growth of bacteria in milk. On the other hand the sugar is frequently fermented and various acids, gases and alcohol may result. The casein and the albumin are decomposed by many bacteria; those develop sharp or disagreeable flavors and unpleasant odors. Again, it has been shown that milk contains certain digestive principles, the so-called unorganized ferments, which slowly digest the milk. All these are foreign to a good starter and of necessity will be guarded against in the selection of milk in which the culture is expected to develop that clean pronounced flavor and later aroma so desirable in the finished product.

The basis of all life is a jelly-like substance known as protoplasm. In its various forms it constitutes the actual living, changing part of every living thing, plant or animal. The simplest living things are merely shapeless masses of this jelly. Bacteria are tiny one-celled plants. Their food must be in a condition to pass through the cell wall to the living protopasm within; it must be in solution. Thus we note certain elements and certain combinations of elements are necessary for their growth.

Milk ofttimes acquires abnormal flavors and odors. Some pathological conditions of the cow may produce milk with an unusual flavor. This may occur when she shows no outward sign of disorder and usually lasts for a short time only and then disappears leaving the creamery man at sea unless he uses some chemical to develop the cause. Highly flavored foods often impart their peculiar flavors to the milk and oftentimes this favor is so mild it is not readily detected until the starter has ripened. Warm milk especially takes up odors and flavors in the surrounding air with great rapidity. Indeed there are so many ways and conditions to guard against in the selection of milk for the starter and each one to be treated differently to insure a culture that is desirable that we wonder that the buttermaker has been able to attain the results he has. Realizing as we do the importance of the necessity of selecting and knowing the milk we use we have dwelt long upon this, the first step in making a starter.

The utensil to be used must next be considered. We have given this long and careful study and prefer to use a copper vessel rather than one of tin or glass, and of the latter two named give the tin the preference. Glass admits the sun's rays to bear upon its contents unless wrapped carefully, destroying the very life of the bacteria producing the desirable flavors. In tin, rust spots often appear leaving a trail of victims in their wake. Our experience has taught us to use a copper can well tinned.

The can should not have an oval top, but rather a flat one with a well fitted cover or lid. With an oval top can we are prone to fill only to the place where the can begins to round in, thus leaving an air space where all sorts of bacterial formations get in their work and get mixed into the culture and are difficult to weed out. Therefore, you will please allow us to repeat—use a copper pail or can, well tinned upon the inside, and fill it full to the cover.

The pasteurization of the milk and the sterilizing of the can are of vital importance, also the preparation of the milk for pasteurization. Warm milk should never be pasteurized until it has been thoroughly cooled. Cooking the animal heat into the milk has destroyed many good cultures and there is but one way to avoid this and that is by thoroughly cooling the milk before it is heated. One hundred eighty degrees F. for thirty minutes is usually all that is necessary to prepare the milk for its inoculation, but there are certain conditions when even this will not bring the desired results. Ofttimes the culture shows a slight separation, a lumpy or curdy condition, the tendency toward a sharp acid is quite prominent and divers other off qualities appear which necessitate a caramelizing of the sugar in the milk, thus producing what is commonly called a red culture. This can be readily overcome by heating to 190 degrees and holding for three or four hours before cooling. This will remove very many of the defects in the old culture.

The variation of but a few degrees will injure the development of a strong growth of bacteria. The amount of inoculation used should govern the time to ripen, not the temperature. Each particular variety of bacteria has an upper and lower temperature limit beyond which it will not grow, and a certain temperature, called optimum, at which it grows the best. The optimum should be ascertained promptly and never vary. In other words, climatize the plant and build your culture in its climate. We desire to repeat: inoculation, not temperature, should govern time of thickening or ripening.

HOW TO EXAMINE CULTURE.

The first examination should be by sight. First look for gas holes; second wheying, color and quantity; third, sediment, cause and quantity; fourth, body—soft, smooth, harsh or hard; fifth, body after breaking—creamy, silky, lumpy, sloppy; sixth, aroma—clean, unclean; seventh, flavor—clean, milk, sharp, unclean, flat; eighth, acid—tongue, palate.

SCORING.

The culture should be scored each day; from this practice we acquire a knowledge that can not be gained in any other way.

The method we have adopted for our own use is very simple and has aided us in accomplishing a great deal in the matter of developing a good culture. We give flavor forty-five, body thirty and acid twenty-five, making a total of 100 points perfect. Our foremost thoughts in this discussion are sanitation and system. Without these two we believe it is next to impossible to be a successful builder of a good culture.

The Chairman: It is a pleasure to have Prof. Mortensen, of Ames, with us today. He will talk to us on "The Modern Iowa Creamery."

MODERN CREAMERY CONSTRUCTION.

BY PROF. M. MORTENSEN, AMES, IOWA.

There has been much interest manifested in the local creamery during the past two years, consequently many new local plants have been erected. The enthusiasm has even reached such a pitch that creameries have been built at places where the farmers are not producing enough milk to support them. This over-enthusiasm should be avoided. The local conditions should be thoroughly studied before investing money in such an enterprise for, although the local creamery is a very valuable institution we should not disregard the fact that the cow is the most important prerequisite for the successful operation of a creamery. Unless the location is such that the creamery can engage in sidelines such as ice cream, sweet cream, etc., it can hardly be considered safe to start a creamery unless the raw product from not less than 600 cows is assured.

The local town organizations, such as the commercial clubs and similar bodies, should be ready and willing to assist the farmers in organizing It is often that the town people are in a better position to sell stock for the proposed organization than the farmers themselves. The subscription of stock should not become payable until a given number of cows have been subscribed. If the total amount of stock cannot be sold to the farmers then the town people should be willing to show their faith in the institution by subscribing for a limited amount of stock. It is advisable, however, that the producers own the controlling interest, for if the management of the plant is in the hands of the non-producers then the farmers are apt to become more or less dissatisfied and such a creamery is less liable to be successful than a strictly individual concern.

After a sufficient amount of stock has been sold and the desired number of cows assured a meeting of the proposed stockholders is called for the purpose of organizing. Temporary officers and directors are elected and a building committee is appointed. Often the directors constitute this committee. The building committee should present plans and specifications and estimate the cost of a plant which they would consider most suitable for the proposed creamery, and if such are accepted by the stockholders it should be left to the building committee to have the creamery built and equipped.

At the first regular stockholders' meeting articles of incorporation and by-laws should be drawn and adopted. The dairy department of the Iowa Agricultural College always stands ready to assist in organizing such associations and can furnish articles of incorporation and by-laws and also assist in preparing plans and specifications for the building.

. It is a pleasure to note that the creameries erected during recent years are far superior to the creameries built a few years ago. The frame building is now practically being discarded for creamery purposes and it is proper that it should be for it is less sanitary, more expensive to retain and affords no protection against fire. It is therefore not without good reason that during the past two years several frame structures have been abandoned and up-to-date, practically fire proof structures erected in place thereof. It is true that a practically fire proof structure will cost more than a frame building, but the difference between the two, considering a building 30 by 60 feet, should not exceed $1,000 and the difference in insurance between the two buildings, not considering the difference in durability of the two, will more than offset the extra cost.

The cost of the building is governed by the amount of building material used and kind of building material. The amount of building material is governed by the size of the building, the strength of the building and the amount of inside partition required.

Specifications should be clear on all points so that they cannot in any way be misinterpreted. The following may serve as a general form of specification:

I. List of drawings.

II. Instructions to bidders.

III. Form of bid.

IV. General conditions: 1, bids; 2, bonds; 3, materials and labor; 4, cleaning; 5, public ordinances; 6, permits; 7, payments; 8, schedule; 9, cutting; 10, faulty work; 11, contractor; 12, patents; 13, extra work; 14, verifying measurements; 15, time for completion; 16, drawings.

V. Mason work; 1, excavating; 2, backfilling; 3, removing rubbish; 4, concrete footings and walls; 5, brick work; 6, stack; 7, mortar; 8, arches; 9, cement floors; 10, sills; 11, bearing plates; 12, coping.

VI. Lathing and plastering: 1, lathing; 2, plaster; 3, patching, etc.; 4, curb; 5, bumpers.

VII. Carpenter work; 1, dimension lumber; 2, girders; 3, anchors; 4, rafters; 5, roof sheathing; 6, window frames; 7, sash; 8, wood centers; 9, door frames; 10, doors; 11, wood floors; 12, inside finish; 13, glazing; 14, ceiling; 15, hardware.

VIII. Sheet metal work and roofing; 1, gutter and down spout; 2, counter flashings; 3, roof.

IX. Painting; 1, general conditions; 2, knots and sap; 3, puttying; 4, priming; 5, painting; 6, floors.

In outlining the floor plan of a creamery plenty of room should be allowed but no more than can conveniently be utilized. The machinery should be so placed as to avoid waste space and so that the factory may be operated with the least possible amount of labor. It is poor policy to economize on space where more, in reality, is needed. Two places where such economy is often visible are the coal room and the supply room. The coal room for most creameries should be large enough so it will hold a carload of coal. The supply room for a creamery with from 600 to 1,000 cows should have a floor space of not less than 250 square feet and it should be conveniently located and in a place where all dust is excluded. It should furthermore be kept dry. The writer has in mind a creamery which was recently built having a supply room 11 by 8 feet and in order to save space there was only one door, and that was an outside door leading to the room. Consequently the supplies had to be carried on the outside of the building for about 25 feet. Another creamery was built with a supply room of nearly the same size but with the entrance close to the coal room. In this case many of the supplies are badly damaged by coal dust.

Creameries erected by the college during the past year have been erected from cement blocks, bricks, hollow tile and hollow tile and brick. In the latter case the outside wall consisted of four-inch brick, the inside of four-inch hollow tile, leaving a two-inch air space between the two. For inside partitions hollow tile was used and for roofing fire proof material. A building thus constructed and of a size 30 by 60 feet can be built for about $3,000. A building of the same size but constructed from cement blocks will cost about $2,000. A creamery of the size mentioned can be built and equipped for about $4,500, but not less than $5,000 should be subscribed in order that they may have sufficient left for working capital.

The Chairman: Mr. F. L. Odell, the government expert, is with us, and I am going to call on him to offer criticisms on the butter exhibit.

Mr. Odell: Mr. President and members of the Iowa State Dairy Association: I haven't any criticisms to offer by any means. It is the finest exhibit of butter I ever saw, and I think the buttermakers of Iowa ought to be proud of themselves for making butter of such quality. I notice in The Creamery Journal that the 10 highest scores averaged 96.98, and I believe the average for the entire exhibit will be the highest ever exhibited in Iowa. My criticisms are very few. There were a few tubs that were poor. The conditions under which this poor butter was made I am unable to tell you. There is one thing in particular I wish to congratulate the buttermakers on and that is the nice appearance of the packages and the workmanship. There were a few spruce tubs, and I wish it were possible to do away with them entirely and use only white ash. We found a very few mottles and some defects in body, and one or two we criticised on salt. As a whole it was an excellent lot of butter. I thank you.

THURSDAY MORNING, 11 O'CLOCK.

The Chairman: According to our by-laws, this is the time for the election of officers. The first nomination to be made is for president.

Mr. Barney: In picking the officers of this association there are a number of things to be taken into consideration, and especially that of president. Having held that office, I know something of the duties that are incumbent upon him. It not only requires a good man in the chair but a man willing to give of his time liberally and a man who has the interests of dairying at heart. I know of no man in Iowa who has done more work for the upbuilding of the dairy business in Iowa—a man who has always been willing to lend a helping hand when he could—than Judge W. B. Quarton, of Algona, and I take pleasure in placing his nomination for the office of president of this association.

There were no other nominations and Judge Quarton was unamimously elected.

Mr. Quarton: I assure you that I regard the honor you have placed upon me as one of the greatest you have to offer, and I assure you that I appreciate it. I know something of the burdens it carries with it. I feel very much encouraged over the dairy interests of Iowa, and if we can make it grow as it has been growing we can make it one of the greatest dairy states in the union. I have nothing to say as to what I will do. I will administer the duties of the office as well as I can.

The following officers were unanimously elected: Vice-president, G. Kolthoff, Britt; secretary, J. J. Ross, Iowa Falls; treasurer, E. T. Sadler, Waterloo.

RESOLUTIONS.

The Iowa State Dairy Association meets in its 36th annual convention under most favorable conditions and most congenial environment. The interest of our people has been stimulated to enthusiasm by the splendid show of dairy cattle and the high quality of dairy products here exhibited. The display of up-to-date devices for the equipment of farm and factory has not been excelled and all augur well for the future of Iowa's dairy industry.

We believe the field work should be continued and recommend the sum of $12,500 be requested of the incoming general assembly for the biennial period.

We wish to commend, in this connection, the invaluable assistance of the railroads of Iowa by and through the dairy trains furnished entirely free of expense to this association or the state.

We tender our appreciation and express our approval of the work of the state dairy commissioner, the dean of the dairy school and their assistants. We heartily endorse the proposed legislation for the protection of genuine dairy products presented by the National Dairy Union and introduced by Representative Haugen, of this state in the national congress.

This association has been peculiarly fortunate in the character and ability of its officers and we congratulate the retiring president, Mr. R. B. Young, and Vice-president L. L. Flickinger, upon the results accomplished and progress made in their official term.

To the citizens of Waterloo we can only say—You have ever made us welcome and the numerous conventions held within your hospitable gates make our annual meetings a valuable renewal of social and business ties.

The dairy interests of the west and particularly of Iowa have met a heavy loss in the recent death of Jules G. Lumbard, one of the organizers and staunchest supporters of the Iowa State Dairy Association. For a third of a century his presence was a feature of our conventions and thousands will recall the rugged personality, the intellectual ability, the wealth of wit, the vigorous manhood tempered by the tenderness of woman, and hold in memory that marvelous voice, that fired the patriotism of our armies, soothed the sorrow of a stricken people and ever encouraged a better citizenship. The qualities of mind and heart and voice that made Jules Lumbard the friend of Abraham Lincoln endeared him to each of us.

Whereas, the general assembly of Iowa has not, heretofore, made appropriations for the purpose of indemnifying owners of stock found to be diseased, and, whereas, destruction had been recommended by the veterinary department of the state and, whereas, the members of the Iowa State Dairy Association believe such a fund should be provided for such purpose, be it

Resolved, by the officers and members of the Iowa State Dairy Association in annual convention assembled, that we favor the appropriation of $50,000 annually or such part thereof as may be necessary to be used by the animal health commission in such manner as may be determined by the legislature for the purpose of indemnifying owners of domestic animals attacked by contagious diseases, when in the opinion of the state veterinarian and the animal health commission such animals should be destroyed to prevent the further spread of such disease. Be it further

Resolved, That the secretary be instructed to present a copy of this resolution to the speaker of the house, and the president of the senate of the 35th general assembly.

W. B. Barney,
E. M. Wentworth,
L. S. Edwards.

E. S. Estel, state dairy expert, made the following report, which was approved:

IOWA STATE DAIRY ASSOCIATION—THE ORGANIZATION AND ITS ACCOMPLISHMENTS.

Although dairying has been an important phase of Iowa agriculture since its beginning, it has never until the past few years received that encouragement which has developed other lines of farming. As a consequence, the Iowa farmer and dairyman have been reluctant to accept improved methods of dairy husbandry.

The creamery interests have made much more rapid progress and today are recognized among the most remunerative factories of Iowa. The education of the buttermakers and creamery managers has received much attention and their efficiency as manufacturers of butter is far in advance of the methods used for the production of the raw product on the average farm. Realizing that there was greater strength in co-operation than there was in individual effort, the Iowa State Dairy Association was organized in 1877. This work, as in any other line, needed some definite foundation, and as there was no large market for the raw products the creamery was naturally the first to receive the attention of the organizers.

The association gradually grew and acquired prestige until in 1909 it had a membership of over 600 buttermakers, farmers and dairymen. At that time it was realized that in the effort of advancing the manufacture of butter, there was an important phase of dairying which had, to a great extent, been overlooked, and if the dairy industry of Iowa was to continue to advance, the cow, which is the foundation of dairying and the source of raw material, must be given consideration.

In order to render certain and make rapid this improvement, the officers of the association appealed to the state legislature for assistance. It was not a difficult task to demonstrate that an appropriation should be made to assist this organization of creamerymen and dairymen to return a great wealth and prosperity to the state. As a result a bill was passed by the 33d general assembly, authorizing the appropriation of $10,000, and one by the 34th general assembly, for $7,500, for the purpose of furthering the dairy interests.

Plans were at once outlined to increase the production of the cow on the farm. A dairy expert, whose duties were to direct the expenditure of the appropriation to best advantage, was selected. As a result, a very active campaign was begun, and during the three and one-half years which have elapsed, the concentrated efforts of all those interested in better dairying have practically revolutionized this industry on the Iowa farm. Extensive as are the results already apparent, there are vast opportunities for further educational work in this important department of the farm. Although many have become impressed with the fact that the good, well bred dairy cow, properly cared for, is the most profitable animal, there are yet thousands who have not learned that cows differ greatly in production and profits. There are many who should yet be taught that, of all animals, the dairy cow is most efficient in conserving and building up soil fertility, in addition to insuring immediate and certain profits to her owner. In many instances, where the dairy cow was formerly ignored and considered a necessary evil, she now occupies the most important position in building up a permanent agriculture.

THE DAIRY TRAINS.

As a means of reaching the largest number of farmers and dairymen in the shortest possible time the special train was used as a medium. During the winter of 1910 the first special dairy train operated by the association over the Chicago, Burlington & Quincy railroad in the southern part of the state met with exceptional success. The results of the lectures delivered upon this first train were of such practical value that the people along the same road demanded a similar opportunity the following winter. The department granted their request and in January, 1911, began a tour over the same territory, meeting much larger and more interested crowds than on the previous visit. The Chicago Great Western and Chicago, Milwaukee & St. Paul roads were traversed during the same season. In 1913 the Illinois Central and Chicago, Rock Island & Pacific furnished the equipment for the Iowa State Dairy Association to extend the information given by its lecturers. The six special trains made 496 stops where lectures and demonstrations were given to more than *200,000 interested farmers and their families.* The trains have been equipped with material for assisting the lecturers in making the information given more practical. Realizing the importance of agricultural education to the younger generation a special car for the school children has been carried during the past year. This feature has proved very popular and has received the hearty endorsement of all the school superintendents along the various lines.

The results of these trains may be found in every locality that they visited. Farmers have become more interested. They have substituted good cows for poor ones; placed at the heads of their herds pure bred dairy sires; erected silos; organized cow testing associations; are raising clover and alfalfa hay where less valuable timothy hay formerly grew, and in fact, are demonstrating in many ways that the information given in the lectures can be applied in a practical manner on the average farm. Due to this success the department has had requests, and arrangements have been completed, for the operation of similar trains during the coming month.

CREAMERY MEETINGS.

The dairy association has been active in perfecting dairymen's organizations throughout the state. It has co-operated with the state dairy commissioner's department in holding meetings at creameries where, due to local conditions, interest has been somewhat lost. Since the employment of the state dairy expert, 184 meetings have been held for the assistance of creameries.

FARMERS' INSTITUTES.

The lecturers employed by the organization have received many requests from the secretaries of farmers' institutes to deliver lectures on subjects pertaining to the development of the industry on the Iowa farm. Although this phase of the work has just been inaugurated during the past year, fifty-four farmers' institutes have been visited.

NORTH IOWA DAIRY IMPROVEMENT ASSOCIATION.

One of the most potent factors demonstrating the opportunities for improving dairy conditions in Iowa has been revealed by the North Iowa Dairy Improvement Association. This organization was founded by the state dairy association with the assistance of the state dairy commissioners. It comprises nine-co-operative creameries located in Worth, Winnebago and Cerro Gordo counties. The object of this co-operative society is to assist the creameries in manufacturing the high grade product and also to aid the farmers in increasing the production of their cows. The organization is self-sustaining and employs a dairy expert who is active in promoting every phase of the work that would be practical and helpful. A bulletin issued by the dairy expert on this phase of the association's work reveals some interesting facts regarding the low production of the average Iowa cow and the necessity for her improvement.

THE IOWA DAIRY CATTLE CONGRESS.

At the 33d annual convention of the Iowa State Dairy Association the production side of the industry was given more attention than before. Prizes were offered for dairy cattle and a small exhibit of dairy cattle was shown, as well as a large quantity of butter being sent for competition. The next year it was decided to hold a dairy show in conjunction with the convention which proved very attractive to the breeders of dairy cattle throughout the state. This show has grown very rapidly until in 1912 it had the largest number of dairy cattle ever exhibited. Although the association has had direct charge of the dairy show, it has not used the funds at its disposal, for the financial responsibility has been borne by the town in which the show is held.

DISTRIBUTION OF LITERATURE.

Although this department has issued but one bulletin, it has been enabled to reach a large proportion of the farmers through the columns of the local newspapers and agricultural publications. Plate material has been distributed in every county in the state. This has included practical information along all lines of improved dairy conditions. The information given has had a broad scope and at no time has it been the object of the lecturers to underestimate any of the other important departments of the farm. Such subjects as "Dairy Industry as Related to Permanent Agriculture;" "Proper Methods of Breeding;" "The Dairy Cow's Ration;" "Winter Dairying;" "Calf Rearing;" "The Essentials of the Profitable Dairy Cow," and "Silos and Silage," have been placed before the farmers in a clear and concise manner.

IMPORTANCE OF INDUSTRY IN IOWA.

At the present time Iowa has 510 creameries which, during the past year, have manufactured 91,738,573 pounds of butter. There are seven cheese factories located within the borders of the state which manufactured 346,456 pounds of cheese during the year 1912. The annual production of dairy products in the state exceeds a valuation of $60,000,000. As in every other country dairying is destined to become one of the most important factors of Iowa agriculture. Although considerable development has been accomplished during recent years, the work has just been begun.

W. H. Chapman, of New Hartford, made a motion that in future years winners of first and second prizes in both the hand separator and whole-milk classes shall not share in the pro rata money. This motion carried with a large majority.

The following address was delivered by Geo. V. Fowler, of Waterloo:

IOWA MADE CHEESE.

GEO. V. FOWLER, WATERLOO.

I am invited to give a paper on the above named subject. Prof. Holden would say, "When you buy Iowa made cheese, you have both the goods and the money, whereas, if you buy cheese made elsewhere, you have the goods but you are minus the money."

Thirty-nine years ago, when I came from New York to make Iowa my home, there was a cheese factory in operation in this city owned by the farmers and managed by Mr. R. Place, a high class man as well as an excellent cheese manufacturer from Herkimer county, New York, who has many years since passed away. The farmers, after running the factory for two years and being unable to handle it successfully, came to us, Fowler Bros., to handle their output on commission. The following year the farmers effected a sale of the factory to Mr. Place, and the cheese was made and handled by Fowler Bros. and Place. A little later the Fowler Company was organized and Mr. Place sold the factory to said company. The market for milk thus made was so satisfactory to the farmers that Mr. Lower, who had moved from this city to Janesville, was instrumental in inducing us to erect a factory there, which has run continuously ever since. Some years later, Joseph White of this city, who at that time was one of our patrons, bought a farm near Reinbeck. He also induced us to place one there. At one time we had four factories running, three in this county. In addition to supplying our retail trade, we had a fine trade with wholesalers in Kansas City and St. Joseph, Missouri, Leavenworth and Atchison, Kansas, Des Moines and Sioux City, Iowa. We also shipped by carloads to Rochester, New York, outselling their own New York make in that market.

Thus it will be seen that, though the margins were close, we had worked up quite a trade. The advantages in our favor, which were shared by our patrons, were, they had cheaper feed for cows than did the farmers of the east and we were able to produce an article that the year round outsold practically any brands shipped in, and, as this movement saved the freight on the cheese from the east, also the freight on the butter, which would have been made from the milk in its stead, to the east, these conditions were all favorable to its being successful. Yet, I learn Wisconsin last year produced in round numbers $22,000,000 worth, and we learn several millions found market in this state. Why should this be necessary more than to ship butter from there for state supply? The fact that cheese is the best substitute for high priced meats also at this time makes this question all the more interesting and cheese seems to be in greater demand now than when meats were cheaper. I ask again, why should cheese be shipped from the east to supply our demands any more than should butter, poultry, eggs, pork, beef, and mutton, and the grains and feeds as well with which to produce them?

This subject really should be "Greater Iowa" from the dairy standpoint. Now, I want to be thoroughly understood; the least of all my business affairs is my investment in the cheese industry and my interests in lands is no small amount, so I want you all to know that I attempt to discuss this question only as a brother farmer and from the farmer's standpoint in the interest of the farmer. None of these questions relative to agriculture should be considered, in my opinion, except the interest of the farmer come first. So remember, greater to me than any form of dairying or all forms combined is that the 225,000 farmers of the greatest state in the union with its untold value, should get instruction of most value to them.

In considering this subject, we must also connect with it its twin sister the whole milk creamery. For, in a certain sense they are one, and the enemy of one is also the enemy of the other. The market of the dairy products may be divided into two classes, sending off the cream on the one hand and the whole milk on the other. Under the head of the latter would come the whole milk creamery, cheese factory, condensing factory and supplying the demand for city consumption. These methods, and gathered cream as well, are all legitimate dairy propositions and each without doubt has greater usefulness than the others under certain conditions.

You will naturally ask why builders, owners, and patrons of these factories should, after working together for years in building up these markets, changing from gathered cream to whole milk, the patrons of 500 of them, go back to gathered cream again. Well, it was like this, while the whole milk creameries and cheese factories owned by firms, individuals, and farmers as well, were run as a dairy proposition, those interested not expecting to get anything out of it only as they could assist in making it a prosperous business and profitable to all, and, although these markets were advancing dairying very rapidly in their respective localities, yet there seemed to be no way they could afford to buy space and influence in dairy and farm papers of the country. So are you surprised that, when these papers found they could contract with the gathered cream interests for large sums; could hire to work for them at fabulous rates when they could not sell space nor hire at all to the whole milk methods (when you consider these facts, the inducements on the one side and the lack of inducements on the other) the cheese industry, whole milk creamery, dairymen, and farmers have not had a square deal? Can you not see that for each cheese factory or whole milk creamery, that these willing workers could put out of business and establish gathered cream in its stead, they had at once from $5,000 to $20,000 of the farmers' money to divide, which has proven very profitable and satisfactory to those in the deal.

One farmer wrote to a farm paper of this state, saying he was keeping cows and could send his milk to a whole milk creamery four miles away or he could buy a farm separator and send his cream off on the train, and asked which he should do. The answer received at once was, "There is no question what you should do. You should buy a farm separator and send off the cream by rail." I then learned he received about $16,500 per annum for space and influence in the farm paper, which he was conducting. You see, if all had followed his advice, all the cheese factories and whole milk creameries of this state would have been destroyed. Yet, he is supposed to take interest in conserving the resources of not only the state but the United States. The methods that did not bring advertising money to him, he could not recommend. The method that did bring this large amount of money into his pockets looked good to him. My dear confiding brother farmers, do you think he was advising this farmer to act in his own interests or was he seeking to influence him to act in his, the editor's, interest? Inasmuch as the editor has hired out to the gathered cream interests for $16,500 per annum and they were doubtless much more critical readers than you, how could he represent your interests and, as money flows so freely into the paper for promoting this sysem, I ask again if you do not conclude that large amounts, larger than what goes to these papers, find enlodgement in the pockets of others occupying positions of influence? That is, can you not guess that this easy money does not stop with the papers but much goes to other sources where it will do the most good to the interests they represent.

A prominent dairy paper refused to use an article showing how the farmer could produce pork at less cost by using corn and pasture than could be done with corn and skim milk, allowing ten cents per 100 pounds for the skim milk. Yet, the very next issue contained a report placing $1.00 per hundred as the value on fresh skim milk because the party fed it to chickens and sold the eggs at forty cents per dozen. How ridiculous! The only way to place a correct value on the skim milk was at what cost a substitute could have been supplied.

At our factory in Janesville, Mr. Bye recently fed ten shoats forty days on whey and fifty-six cent corn. He showed that at seven cents per pound for pork he, with a little over $6.00 worth of corn had produced more than $26.00 worth of pork, getting almost $20.00 for the whey or seventy cents per 100 pounds. Will any farm paper pay $100 for this dairy item? Why, bless your heart no! Why not? Because there is no farm machinery connected with it whereby they can get the farmer's money. As it would be only for the benefit of the farmer, do you conclude they would care for it?

PROFESSOR HENRY'S MISTAKE.

You all have seen over and over again that skim milk, according to this professor, who is usually correct, because he fed shoats corn and skim milk, and, of the many tests the one where he fed nearest right 100 pounds skim milk saved a half bushel of corn, that, therefore, was its value. The corn was worth sixty cents, so the value of the skim milk would be worth thirty cents per hundred. Oh my, what reasoning! Yet these people are pleased to use it. The only way it could be made to appear this way was to feed the check lot as poorly as possible corn only, which he did. I am showing you that it would have been just as reasonable to have fed one lot skim milk only and then concluded because the lot which he fed skim milk and corn did so much better, therefore the corn was worth two to three dollars per bushel. One might just as consistently say in testing the value of gluten as a cow feed, because I fed a cow corn only and got such results and then added gluten and obtained so much better results, therefore, the value of the gluten was $150 to $200 per ton. If gluten feed people tried to do this, we would say, "You are not in competition with corn. Your competitors are cotton seed meal, oil meal, bran, oats, etc., and a mixture of which, that is as good as gluten and contains the same nutrients, can be compounded at a cost of $25 to $28 per ton, and that decides the value of your gluten."

One says, "I see, Mr. Fowler, those interested deeply in promoting gathered cream make much of their skim milk for hog feed. What do you say to it?" The skim milk is rich in protein and therefore ranks along with tankage, oil meal, and gluten (more especially with the latter), but is handicapped by containing 90 1-2 per cent water, so, in each

100 pounds we only can deal with nine and one-half pounds of feed. These feeds are all valued according to the protein they contain and have their greatest value in winter. Skim milk contains three and one-half pounds of this substance per 100 pounds while tankage contains sixty pounds; nearly a ton of skim milk or butter milk would be required to furnish as much as 100 pounds of tankage contains.

THE AMOUNT OF PROTEIN IN SKIM MILK OF THE STATE.

We learn there is made per annum, in the state, about 100,000,000 pounds of butter. We will say that each 100 pounds of milk makes about four pounds of butter, and we have learned that, after cream is taken away, each 100 pounds of milk contains say three pounds of protein. This, you will see, would give us 75,000,000 pounds of protein. You will agree with me that the calves get about half of this amount, leaving, to be liberal, 40,000,000 pounds for the hogs. How many hogs in the state? There are about 8,000,000 on hand I learn each year on January 1, in the state, as many, that come in the spring, are turned off in the fall. You will agree with me there are say 10,000,000 produced each year, leaving only four pounds of protein for each hog per annum from this source. Yet, the reliable authorities tell you that each hog needs six-tenths of a pound of protein per day, nearly 200 pounds per annum. Still, from the skim milk source he can secure on an average only four pounds or 2 per cent of his needs. You now agree with me that in hog feeding what is most needed is to learn where and how to secure the balanced ration at lowest cost; that is, where the other 98 per cent of protein, which is not found in the skim milk of the state, is to come from. You have seen how eager are those engaged in promoting gathered cream to have you feed the hogs their way, which is correct for 2 per cent of the hogs; now can you not see that, if there could be the same effort to teach in your behalf in securing a correct feed at lowest cost for the other 98 per cent, there might easily be saved to the farmers of the state in hog feeding alone $40,000,000 to $50,000,000 over the method they so persistently teach. All that is lacking is a proper incentive to teach it.

Skim milk in common with these other feeds, rich in protein, has a fluctuating value. The object is to always use a balanced ration and then to secure it a lowest cost. As corn is cheapest feed in winter, the point is to use feed in the combination that will enable the feeder to use the most corn. Hence, skim milk and its kindred feeds have a good value in winter, for they enable you to use more corn. But, for feeding during the pasture season, all is changed. Why? Because, after the shoat weighs say forty pounds, the pasture contains more protein than he needs and is also the cheaper feed. So, the point is to use as much pasture as possible because it is cheaper and at the same time have a balanced feed, and by supplying about one-third of his requirements with corn, you leave your happy and willing servant to gather the remaining two-thirds which makes the proposition profitable, from rye, rape, clover, alfalfa, or other pastures. There are multiplied thousands among the best farmers of the state, that have, after this method since May 1 to this date with sixty cent corn and pasture produced pork at one-half to one-third the cost, that could have been done during the same time with sixty cent corn and thirty cent skim milk, which is also a correct balanced feed.

Do you not now see this great point, that, as skim milk, gluten, oil meal, and tankage, which are narrow, they will require more of the high priced corn for a correct ration than is the case with pasture? Therefore, it is possible (or shall I say absolutely true) that skim milk, gluten, tankage, and oil meal have no value whatever where you have plenty of the pastures needed to feed a hog after he weighs fifty pounds because more corn will be required to get the results. Perhaps there may be a man here, who doubts this. He can easily test it by feeding three shoats each way. Of these two methods, the difference is that on the one hand he can not avoid buying by products from the various factories producing protein feeds, or the machinery necessary to enable him to feed the fresh skim milk, while on the other hand, he uses only pasture for his protein feed, paying tribute to no one, using his own intelligence and his own farm to produce all the protein needed and, thereby, growing pork at one-third the cost obtained by the method taught by the over anxious instructors of the country.

In following the popular teaching along these lines, the farm papers and their associates have gotten the results, so are well pleased. The farmers, who follow the teaching I have endeavored to give, get the results that suit them and they are pleased. I know I am censured by many honest and otherwise intelligent farmers for presuming to teach a better method than that usually followed. If there be such a one here today, I will say, my dear brother, though your present method may have answered fairly well when land and labor were cheap, are you just sure there may not be something better in store for you on your high priced land? What I desire most of all is this, that I and my motives be correctly understood by the farmers and also that all who teach differently, and their motives be correctly understood by the different farmers. You will please remember that all progress along any lines was only attained because someone got the vision that there was to be found a better method than those generally in use. There was a time when the use of the spade, sickle, tallow candle, etc., were quite the thing; now greater capacity is required to meet the demand. Is there any reason why there is not also a demand in hog feeding way ahead of the old method of skim milk and corn, which also was considered satisfactory years ago?

I wish you also to see that, if all the skim milk in the state was fed to hogs, it would not supply more than enough protein for five per cent of the hogs. I wish to show you too that, as the larger part of hogs come in the spring and are turned off in the fall, therefore, a proper combination of corn and pasture is of vast importance because three fourths of all the pork produced is produced during the seven months of pasture season. You will see how out of all proportion is the teaching, while according to their own teaching, all the skim milk would balance correctly the corn for only five per cent of the hogs. Yet they give this method so much attention and so very little to feeding the ninety-five per cent which the skim milk cannot reach. Their main interest is centered on the five per cent while your chief interest is centered on ninety-five per cent. The hirelings work their interest. Who is working yours?

Prof. Holden also told me I could tell the farmers at Janesville that one acre of clover pasture is equal to the skim milk from eight cows, and that feeding corn thereon to hogs benefited the land enough to pay the rent, so the protein thus obtained to take the place of the skim milk really cost nothing.

Listen to me. You can feed your hogs *my* way and do dairying after either method or none at all; whereas, in order to feed hogs their way, you must follow their kind of dairying and by their machinery sure.

According to the Ohio and other reliable experiment stations, skim milk has in winter a feeding value of fifteen cents to eighteen cents per hundred at present prices of protein feed, but, in summer time has lost most, and in some cases we believe all its value. I repeat, "Why?" Because you have a surplus of protein, the pasture containing more than you need, and no more use for it than you have for your fur coat or ten dollar coal in August with which to keep warm.

SOME EXAMPLES.

J. W. Bennett fed gluten and whey on pasture to pigs weighing twenty-nine and one-half pounds each for one month, making rapid gains at cost of $1.75 per hundred. Prof. Kennedy says in the cheese section of Canada the farmers feed shorts and whey on pasture and turn them off 225 pounds each at five and a half to six months old. The professor also reports that they have, at Ames, after charging up all grain used, produced 1400 pounds pork per acre of rape.

The Alabama Experiment Station reports that by feeding corn only, pork costs $7.63 per hundred, while, by using pasture and corn, it costs only $2.74 per hundred, only a little more than one-third.

S. Y. Thornton of Missouri a few years ago told me he produced shoats to 100 pounds each on pasture at a cost of $1.00 each for all grain used. Grain some cheaper than now.

A farmer at Osceola, this state, told me he sold four hundred hogs that, after taking out eight, topped the Chicago market. They were fed only twenty bushels corn per day, from May 1 till August 1, on pasture, and he estimated they gained more than one pound each per day.

Of those giving me credit for inducing them to feed after this method are E. E. Prosser, F. R. Decker, and Walter Peck, of Janesville, and Fred Wilcox of this city, claiming a given amount of corn produces about double the amount of pork they formerly produced.

This is simply the farmer's method worked out in the interest of the farmer, and I never knew of anyone leaving it to pursue any other course.

We are nearly in the center of the great corn belt, our capacity, our advantages, and our opportunities are so wonderful that it would seem most impossible for any man to exaggerate them. We produce around

$150,000,000 worth of pork per annum, and, of the two methods of feeding, one saves half the expense. Have I not shown you that the hog can make even better use of pasture than other animals, also that it is much better to use with corn than is skim milk? Then I ask, why should we ask the cow to first convert the pasture into skim milk and then ask the hog to use it second hand? The shoat from forty pounds to 175 pounds can make most profitable use of this method, and there are multiplied thousands in this state that, after this method, have, since May 1, made their gains even with the high cost of corn at 1½ to 2 cents per pound.

I, therefore, ask you in your own interest, in the interest of Greater Iowa, and in the interest of the hungry consumer of the country, to get into the method that means so much to you and to us all.

Some may wonder why I have not said more about Iowa made cheese. It is this, if the farmers can have more correct and honest teaching, cheese making, all other forms of dairying, and pork production will progress as never before. Get your eye on Wisconsin in their production of $90,000,000 worth of dairy products last year. Of this, $24,000,000 was cheese, many millions of which found market in this state.

I am a lover of harmony and dislike to differ with others, but I *am* for "Greater Iowa" and no one would be more pleased than I to have those who teach differently take the broader view and really work for the farmer and "Greater Iowa."

In conclusion, my dear brother dairy farmer, while there are all these different forms of dairying, condensed, cheese, whole milk creameries, city consumption, and farm separating, does it strike you as especially strange that (inasmuch as the latter method is the only way out of which the active ones can get your money) they use all their influence to get you to pursue that method, and, because they have found it the most profitable for them to teach, is that any guarantee that you will find it the most profitable for you to follow? Was it their aim to teach you the best method of butter production, or, on the other hand, was the object to influence you to buy and use the farm separator?

Then, in hog feeding you will notice this same interest; as far as possible to influence the farmer to place a high value on the warm sweet skim milk, which is also done in the interest of the farm separator. So you see, under the pretense of promoting dairying, they use their influence to sell the separator and under the guise of teaching hog feeding they really are teaching warm sweet skim milk feeding also in the interest of the farm separator.

So, are you surprised that when one makes a study of this matter from the farmer's standpoint, and wholly in the interest of the farmer, there should be found to exist a system which, if pushed with anything like the vigor with which the system referred to has been pushed, could easily add, with no additional labor, forty to sixty million dollars annually to the net profits of the farmers of the state?

BUTTER SCORES IOWA STATE DAIRY CONVENTION, WATERLOO, IOWA, OCTOBER 14 TO 19, 1912.

WHOLE-MILK CLASS.

No.	Name	Churn	Salt	Color	Culture	Score
44	Erve A. Cole, Lamoni	Vic	DC	H	E	98
88	W. E. Mittlestadt, Manchester	Vic	DC	H	O	97¾
74	C. A. Day, Sumner					97¼
118	Matt McDowell, Hazleton	Vic	DC	H	E	97
40	Roy Scoles, Fredericksburg	Vic	DC	H	H	96½
81	E. B. Olds, Sumner	Vic	DC	H	H	96½
82	F. H. Wehling, Readlyn	Vic	DC	H	H	96½
38	F. M. Zell, Sumner	Dis	DC	WR	E	96
67	E. E. Middlestadt, Arlington	Dual	DC	WR	E	96
83	R. W. Chadwick, Waterloo	Perf	DC	OD	E	96
106	P. W. Peterson, Finchford	Dual	DC	H	E	96
63	Anton Smith, Oelwein	Vic	DC	OD	C	95½
69	T. E. Sadler, Oelwein	Dis	DC	WR	O	95½
84	Wm. Ambrose, Tripoli	Vic	DC	H	E	95½
23	Carl Haveland, Lake Mills	Vic	DC	OD	E	95
48	H. Piegors, Waverly	Dis	DC	H	E	95
55	F. W. Bremer, Sumner	Vic	DC	H	E	95
73	J. J. Brunner, Strawberry Point	Dis	DC	WR	H	95
79	F. W. Brockhaus, Sumner	Dis	DC	H	E	95
116	C. B. Bracey, Maynard	DQ	W		E	95
137	L. L. Zbornik, Sumner	Vic	DC	H	H	95
25	H. C. Ladage, Plainfield	Dual	DC	H	C	94½
70	N. W. Graf, Elma					94½
78	D. W. Mohler, New Hampton	Sim	W	P	E	94½
112	Julius Brunner, Osage	Dis	DC	WR	C	94½
121	R. J. Erb, Manchester	Vic	DC	H	E	94½
152	Wm. McFarland, Hudson	Vic	DC	WR	E	94½
2	Soren Kristensen, Scarville	Dis	DC	WR	E	94
22	F. H. Harms, Waverly	Vic	DC	H	E	94
27	Milton Colton, Masonville	Vic	DC		E	94
54	Carl Meier, Fairbank	Dis	DC	H	H	94
60	Wm. Kucker, Cylinder	Vic	W	WR	E	94
61	G. Stuessi, Manchester	Dis	DC	H	E	94
80	L. C. Barnes, Westgate	Vis	DC	H	E	94
119	M. Anderson, Emmetsburg	Per	W	WR	E	94
125	A. W. Snyder, Lawler	Vic	DC	H	C	94
138	E. H. Homan, Westgate	Vic	DC	WR	E	94
141	J. F. Lorensen, Benson	Dis	DC	WR	E	94
144	Peter Larson, New Hartford	Vic	DC	WR	E	94
76	C. S. Payne, Stanley					93½
124	H. A. Griese, Readlyn	Dual	DC	H	H	93½
64	Robt. Wagner, Sumner	Vic	DC	H	C	93
128	C. E. Brant, Fairbank	Vic	DC	H	E	93
145	W. A. Stone, Central City	Dual	DC	WR	E	93
31	W. H. Chapman, New Hartford					92
139	F. D. Daniels, Fredericksburg	Vic	DC	H	E	92
68	G. M. Miller, Fayette	Per	W	D		91
127	L. S. Edwards, Dewar	Vic	DC	WR	C	91

GATHERED CREAM CLASS.

No.	Name	Churn	Salt	Color	Culture	Score
15	F. D. Warner, Northwood	Dual	DC	WR	E	97
19	Fred C. Hinze, Hanlontown	Vic	W		E	96¾
99	Carl Nelson, Swea City	Per	W	WR	H	96½
39	A. F. Matson, Volga	Vic	DC	WR	C	96
28	O. B. Stenberg, Ellsworth	Vic	W	WR	HM	95
42	L. C. Laugesen, Harlan	Per	W	WR	HM	95
59	R. D. Sweet, Allison	Vic	DC	D	H	95
91	H. P. Bancroft, Delhi					95
131	J. C. Joslin, Hartley	Vic	W	WR	E	95
150	Fred Lockwood, Wesley	Per	W	WR	E	95
159	T. E. Landis, Farley	Per	W		HM	95
10	L. P. Nelson, Exira	Dis	DC	H	E	95
4	B. F. Schultz, West Union	Vic	DC	WR	C	94½
9	C. C. Anker, Ottosen	Per	DC		E	94½
29	H. C. Stendel, Scarville	Dis	DC	WR	E	94½
35	J. M. Healey, Dubuque	Dis	DC	WR	E	94½
52	Fred Lehman, Monticello	Dis	DC	WR	E	94½
133	H. Soballe, Coulter	Dual	DC	WR	E	94½
1	M. J. Bobo, Plum Creek	Dis	W	WR		94
5	M. P. Junker, Graettinger	Dis	W	WR		94
11	Geo. G. McBride, Parkersburg	Vic	DC	WR	E	94
14	C. N. Hart, Plymouth	Per	DC	H	C	94
136	Joel Bloomster, Hobart	Vic	W	WR	C	94
30	H. M. Crocker, Osage	Dual	DC	H	E	94
33	Walter Evans, Woodbine	Vic	Col	WR		94
36	Watson Shick, Monona	Vic	DC	WR	E	94
41	V. O. Williams, Afton	Dis	DC	WR	E	94
62	Henry Hansen, Cylinder	Vic	W	WR	H	94
101	M. M. Sorenson, Goodell	Dis	W	WR		94
146	R. Nelson, Latimer	Dis	DC	WR	E	94
151	N. Overgaard, Wheatland	Vic	W	H	H	94
157	John Paulson, Woden					94
77	Chris. Jensen, Toronto	Vic	W	WR	E	93½
91	Ole Hauge, Ossian	Dis	DC	WR		93½
103	C. H. Vanderham, Belmond	Per	W	WR		93½
104	Frank Larson, Dows	Dual	DC	WR		93½
114	Wm. Helgason, Lone Rock	Per	W	WR	E	93½
115	W. E. Cline, Casey	Vic	W	WR	E	93½
122	Chris. Nelson, Exira	Dual	DC	WR	E	93½
153	P. Damgaard, Eagle Center	Vic	DC	WR	E	93½
3	Johannes Johansen, Exira	Vic	DC	WR		93
8	J. T. Ryan, Adair	Vic	W	WR	H	93
50	W. P. Hughes, Fairbank	Vic	DC		E	93
53	Mike Hauer, Festina	Vic	DC	H		93
85	C. T. Knutson, McCallsburg	Per	DC	WR		93
92	Earl George, Central City	Per	DC	WR		93
93	Wm. Matters, Graettinger	Dis	W	WR	E	93
98	Ed Hansen, Elgin	Dis	W			93
110	Robt. Moeller, Shellsburg	Dis	DC	WR		93
129	Robt. Bless, Ventura	Vic	W	H	H	93
46	R. E. Clemmons, Burt	Per	W	WR	E	92½
47	Jack Frisbie, St. Olaf	Vic	DC	WR		92½
49	S. S. Hudson, Titonka	Per	W	WR		92½
57	J. H. Bakken, Ridgeway	Per	W	H	E	92½
95	H.C. Thompson, Buffalo Center	Vic	DC	H	E	92½
102	O. W. Dubbs, West Bend	Per	W	WR		92½
107	G. F. Allard, Pomeroy	Dual	W	WR	E	92½
117	Jas. Romine, Urbana	DQ	DC			92½
120	Nels Hansen, Stuart	Vic	DC	WR	E	92½
148	Jas. Keachie, Dexter	Vic	W	WR	E	92½
150	J. P. Crippes, Luxemburg	Vic	DC	D		92½
6	G. J. Gudknecht, Owassa	Vic	W	WR	C	92
13	John S. Smith, Alden	Dis	DC	WR	H	92
16	N. O. Dahlen, Northwood	Per	DC	WR		92
18	P. Windfeldt, Audubon	Per	DC	H	E	92
26	O. W. Hicks, Guernsey	Per	DC	WR	E	92
37	E. Z. Carr, Wadena	Vic	W	WR	PD	92
65	C. R. Conway, Garner	Per	W	WR	H	92
126	Guy Thomas, Clear Lake	Per	W	WR		92
155	B. T. Soles, Stout	Vic	DC		E	91½
58	J. D. Main, Greenfield					92
87	Fred Herzog, Hubbard	Dis	DC	WR	H	91½

GATHERED CREAM CLASS—Continued

No.	Name	Churn	Salt	Color	Culture	Score
111	O. B. Bengston, Central City	Dual	DC	WR		91½
135	Peter Thuessen, Kimballton	Dis	Col			91½
17	C. E. Wilson, George	Dis	DC	WR	H	91
32	H. K. Nelson, Joice	Dis	W			91
56	M. W. Bixby, Humeston	Sim	DC	WR	E	91
66	John J. Marx, Hospers	Vic	W	WR	E	91
113	Sig. Klemsrud, Osage	Dis	Col	WR		91
132	L. H. Larson, Sexton	Dis	W	P		91
143	L. P. Anderson, Algona					91
134	F. W. Stickman, Ionia	Dis	DC	H		91
12	C. W. Larson, Grand Junction	Per	DC	WR	E	90
21	C. H. Vander Meer, Orange City	Per	W	GG	E	90
71	Roy Coon, Bayard	Vic	DC	H	HM	90
75	Iver Barlow, Calmar	Dis	DC	H		90
86	Jens Jensen, Newburg	Dual	W	WR		90
109	C. A. Miller, Aplington	Dis	Wyan	WR		90
7	A. F. Schultz, Cedar Falls	Dis	DC	WR	E	89
24	W. J. McPheeters, Storm Lake	Per	DC	P	HM	89
34	G. A. Bristol, Primghar	Dis	DC	WR	H	89
45	C. F. Bollig, Fenton	Per	DC	WR		89
89	J. A. Kramer, Ashton	Per	W	WR	E	89
140	Ernest Silhaven, Spencer	Vic	W	GG		89
130	A. O. Pelly, Rowan					89
149	Alfred Otnes, Maquoketa	Vic	DC	WR		89
151	J. J. Doleschal, Bancroft	Dis	DC	WR	E	89
156	C. W. Davis, Wall Lake	Dis	W		E	89
43	Julius Suhr, Coon Rapids	Per	DC	WR	E	88
51	Walter Freed, Clinton	Vic	DC	WR	H	88
90	A. Larson, Charles City	Dis	DC	H	C	88
97	R. L. Rector, Tipton	Dual	DC	WR	H	88
142	F. W. Johnson, Laurens	Dis	DC	WR	E	89
105	Wm. Gossman, Waterloo	Vic	DC	WR	H	87
108	W. F. Schurke, Gilbertsville					86
100	J. A. Fenger, Garner	Dis	W	WR		86
72	Joe P. Bogh, Rutland	Per	DC	WR	H	85

MEMBERSHIP IOWA STATE DAIRY ASSOCIATION, 1912.

M. J. Bobo, Algona, Ia.
Soren Christensen, Scarville, Ia.
Johan Johansen, Exira, Ia.
B. F. Shultz, West Union, Ia.
M. P. Junker, Greattinger, Ia.
G. J. Gudknecht, Owasa, Ia.
A. F. Shultz, Cedar Falls, Ia.
J. T. Rijan, Adair, Ia.
C. C. Anker, Ottosen, Ia.
L. P. Nelson, Exira, Ia.
Geo. G. McBride, Parkersburg, Ia.
C. W. Larson, Grand Junction, Ia.
Jno. S. Smith, Alden, Ia.
C. N. Hart, Plymouth, Ia.
F. D. Warner, Northwood, Ia.
N. O. Dahlen, Northwood, Ia.
C. E. Wilson, George, Ia.
P. Windfeldt, Audubon, Ia.
Fred C. Hinze, Hanlontown, Ia.
J. F. Vandermeer, Orange City, Ia.
F. H. Harms, Waverly, Ia.
Carl Haveland, Lake Mills, Ia.
W. J. McPheeter, Storm Lake, Ia.
H. C. Ladage, Plainfield, Ia.
O. W. Hicks, Guernsey, Ia.
Milton Colton, Masonville, Ia.
O. B. Stenberg, Ellsworth, Ia.
H. C. Stendel, Scarville, Ia.
H. M. Crocker, Osage, Ia.
W. H. Chapman, New Hartford, Ia.
H. K. Nelson, Joice, Ia.
Walter Evans, Woodbine, Ia.
G. A. Bristol, Primghar, Ia.
J. M. Healy, Dubuque, Ia.
Watson Snick, Monona, Ia.
E. Z. Carr, Wadena, Ia.
F. M. Zell, Sumner, Ia.
A. F. Matson, Volga, Ia.
Roy Scoles, Fredericksburg, Ia.
V. O. Williams, Afton, Ia.
L. C. Laugesen, Harlan, Ia.
Julius Suhr, Coon Rapids, Ia.
Erve A. Cole, Lamont, Ia.
C. F. Bollig, Fenton, Ia.
R. E. Clemons, Burt, Ia.
Jack Frisbie, St. Olaf, Ia.
H. Piegors, Waverly, Ia.
S. S. Hudson, Titonka, Ia.
W. P. Hughs, Fairbank, Ia.
Walter Freed, Clinton, Ia.
Fred Lehman, Monticello, Ia.
Mike Hauer, Festina, Ia.
Carl Meier, Fairbank, Ia.
F. W. Bremer, Sumner, Ia.
M. W. Bixby, Humeston, Ia.
J. H. Bakken, Ridgeway, Ia.
J. D. Main, Greenfield, Ia.
R. D. Sweet, Allison, Ia.
Wm. D. Kucker, Cylinder, Ia.
G. Stuessi, Manchester, Ia.

MEMBERSHIP IOWA STATE DAIRY ASSOCIATION—Continued

Henry Hansen, Cylinder, Ia.
Anton Smith, Oelwein, Ia.
Robt. Wagner, Sumner, Ia.
C. R. Conway, Garner, Ia.
Jno. J. Marx, Hospers, Ia.
E. E. Mittlestadt, Arlington, Ia.
G. M. Miller, Fayette, Ia.
Thos. E. Sadler, Oelwein, Ia.
N. W. Graf, Elma, Ia.
Roy Coon, Bayard, Ia.
Joe P. Bogh, Rutland, Ia.
J. J. Brunner, Strawberry Point, Ia.
C. A. Day, Sumner, Ia.
Iver Barlow, Calmer, Ia.
C. S. Payne, Stanley, Ia.
Chris Jensen, Toronto, Ia.
D. W. Mohler, New Hampton, Ia.
E. H. Bockhaus, Sumner, Ia.
L. C. Barnes, Westgate, Ia.
E. B. Olds, Sumner, Ia.
F. H. Wehling, Readlyn, Ia.
R. W. Chadwick, Waterloo, Ia.
Wm. Ambrose, Tripoli, Ia.
C. T. Knutson, McCallsburg, Ia.
Jens Jensen, Newburg, Ia.
Fred Herzog, Hubbard, Ia.
W. E. Mittlestadt, Manchester, Ia.
J. A. Cramer, Ashton, Ia.
Alex Larson, Charles City, Ia.
H. P. Bancroft, Delhi, Ia.
Earl George, Central City, Ia.
Wm. Matters, Greattinger, Ia.
Ole Hauge, Ossian, Ia.
H. C. Thompson, Buffalo Center, Ia.
R. L. Rector, Tipton, Ia.
Ed Hansen, Elgin, Ia.
Carl Nelson, Swea City, Ia.
J. A. Fenger, Garner, Ia.
M. M. Sorensen, Goodell, Ia.
O. W. Dubbs, West Bend, Ia.
C. H. Vanderham, Belmond, Ia.
Frank L. Larson, Dows, Ia.
Wm. Gossman, Waterloo, Ia.
P. W. Peterson, Finchford, Ia.
G. F. Allard, Pomeroy, Ia.
W. F. Schurke, Gilbertsville, Ia.
C. A. Miller, Aplington, Ia.
Robt. Moeller, Shellsburg, Ia.
O. B. Bengston, Central City, Ia.
Julius Brunner, Osage, Ia.
Sig. Klemesrud, Osage, Ia.
Wm. Helgeson, Lonerock, Ia.
W. E. Cline, Casey, Ia.
C. B. Bracy, Maynard, Ia.
Jas. Romine, Urbana, Ia.
Matt McDowall, Hazleton, Ia.
M. Anderson, Emmetsburg, Ia.
Nels Hansen, Stuart, Ia.
R. J. Erb, Manchester, Ia.
Chris C. Nelson, Exira, Ia.
H. A. Griese, Readlyn, Ia.
A. W. Snyder, Lawler, Ia.
Guy Thomas, Clear, Lake, Ia.
L. S. Edwards, Dewar, Ia.
C. E. Brant, Fairbank, Ia.
Robt. Bless, Ventura, Ia.
A. O. Pelly, Rowan, Ia.
J. C. Joslin, Hartley, Ia.
L. H. Larson, Sexton, Ia.
H. Soballe, Coulter, Ia.
F. W. Stickmann, Ionia, Ia.
Peter Thuessen, Kimballton, Ia.
Joel Bloomster, Hobart, Ia.
L. L. Zbornik, Sumner, Ia.
E. H. Homan, Westgate, Ia.
F. D. Daniels, Fredericksburg, Ia.
Ernest Silhaven, Spencer, Ia.
J. F. Lorenson, Cedar Falls, Ia.
F. W. Johnson, Laurens, Ia.
L. P. Anderson, Algona, Ia.
Peter Larson, New Hartford, Ia.
W. A. Stone, Central City, Ia.
R. P. Nelson, Latimer, Ia.
Jas. Keachie, Dexter, Ia.
Alfred Otness, Maquoketa, Ia.
J. P. Crippes, New Vienna, Ia.
A. J. Doleschal, Bancroft, Ia.
Wm. McFarlane, Hudson, Ia.
Peter Damgarrd, Waterloo, Ia.
N. Overgarrd, Wheatland, Ia.
B. T. Soles, Stout, Ia.
C. W. Davis, Wall Lake, Ia.
Jno. Paulsen, Woden, Ia.
Fred Lockood, Wesley, Ia.
T. E. Landis, Farley, Ia.
E. R. Shoemaker, Waterloo, Ia.
J. W. Ford, Cedar Falls, Ia.
O. P. Thompson, Waterloo, Ia.
W. C. Cranston, Waterloo, Ia.
C. E. Fifer, Cedar Falls, Ia.
Edith Stacy, Waverly, Ia.
F. S. Pettitt, Waterloo, Ia.
O. O. Hummond, Waterloo, Ia.
F. E. Guptill, Cedar Falls, Ia.
N. J. Michaelson, Cedar Falls, Ia.
N. L. Bennit, Waterloo, Ia.
L. L. Flickinger, Carroll, Ia.
Mrs. J. D. Miller, Waterloo, Ia.
L. C. Aikin, Waterloo, Ia.
F. L. Huntley, Waterloo, Ia.
J. T. Swift, Waterloo, Ia.
D. Davis, Waterloo, Ia.
Joe Clark, Waterlo, Ia.
E. E. Wood, Waterloo, Ia.
Porter Fitch, New York, Ia.
B. L. Meyers, Waterloo, Ia.
B. L. Edwards, Waterloo, Ia.
A. E. Huffman, Waterloo, Ia.
E. Diercks, Waterloo, Ia.
H. C. Hoffman, Minneapolis, Minn.
Mrs. H. Lawlers, Waterloo, Ia.
J. J. Ramboy, Waterloo, Ia.
F. T. Bentley, Waterloo, Ia.
J. H. Sindlinger, Waterloo, Ia.
Sam Simmons, Waterloo, Ia.
Jno. Andrews, Waterloo, Ia.
H. H. Morgan, Cedar Falls, Ia.
H. Kilgore, Waterloo, Ia.
E. J. Covell, Waterloo, Ia.
Bert Crowther, Waterloo, Ia.
C. M. Corey, St. Paul, Minn.
H. E. Colby, Waterloo, Ia.
J. D. Miller, Waterloo, Ia.
C. E. Noonan, Waterloo, Ia.
C. Ottosen, Ottosen, Ia.
W. Reefsnyder, Waterloo, Ia.
W. H. McIntosh, Davenport, Ia.
W. V. Foote, Waterloo, Ia.
V. Gline, Shellsburg, Ia.
Elmer W. Stephensen, Fairbank, Ia.
Frank Fox, Winthrop, Ia.
G. L. Busian, Algona, Ia.
E. J. Graham, Cedar Falls, Ia.
A. N. Young, Evanston, Ill.
E. J. Whitmore, Owatonna, Minn.
J. H. Sasseen, Des Moines, Ia.
E. M. Baker, Monticello, Ia.
D. B. Byrum, Chicago, Ill.
M. E. Flynn, Burlington, Ia.
S. Sweitzer, Waterloo, Ia.
H. A. Nelson, Dubuque, Ia.
J. H. Grommon, Manchester, Ia.
C. R. Walker, St. Clair, Mich.
H. L. Peterson, Ames, Ia.
E. H. Griffith, Ames, Ia.
E. O. Bollman, Ames, Ia.
Aug. Brandenburg, Waverly, Ia.
L. T. Miller, Fairbank, Ia.

MEMBERSHIP IOWA STATE DAIRY ASSOCIATION—Continued

A. A. Jennings, Chicago, Ill.
C. A. Morris, Waterloo, Ia.
C. H. Hackett, Waterloo, Ia.
J. J. Hall, Waterloo, Ia.
F. B. Ballow, Waterloo, Ia.
G. H. Tellier, Ames, Ia.
G. J. Miller, Ames, Ia.
C. A. Smith, Waterloo, Ia.
J. W. Lichty, Waterloo, Ia.
J. J. Peck, Waterloo, Ia.
O. L. Huston, Waterloo, Ia.
Chas. E. Fisher, New York City.
Jno. Shaw, Waterloo, Ia.
S. L. Klingman, Waterloo, Ia.
W. P. Walker, Waterloo, Ia.
W. Barrett, Waterloo, Ia.
E. Feely, Waterloo, Ia.
Robt. Anderson, Waterloo, Ia.
Roy Bennett, Waterloo, Ia.
F. L. Hix, Waterloo, Ia.
W. B. Johnson, Des Moines, Ia.
C. L. Klingman, Des Moines, Ia.
Peter Eide, Des Moines, Ia.
W. B. Fox, Waterloo, Ia.
J. T. Cannon, Waterloo, Ia.
J. K. Worley, Waterloo, Ia.
P. J. Martin, Waterloo, Ia.
D. Holmes, Waterloo, Ia.
Aug. Brandhorst, Hudson, Ia.
Fred D. Ford, Rockwell, Ia.
D. M. Campbell, Rockwell, Ia.
J. H. Conant, Gladbrook, Ia.
U. G. Gruver, Cedar Rapids, Ia.
Jim Lawrence, Waterloo, Ia.
Chas. Ross, Waterloo, Ia.
W. A. Blough, Waterloo, Ia.
L. H. Miller, Waterloo, Ia.
D. S. Harrison, Waterloo, Ia.
H. A. Limbert, Waterloo, Ia.
J. W. Bissell, Waterloo, Ia.
A. O. Larson, Dows, Ia.
H. J. Iverson, Dows, Ia.
A. H. Iverson, Dows, Ia.
O. B. Iverson, Dows, Ia.
M. J. Goodrich, Cedar Rapids, Ia.
W. A. Lally, Chicago, Ill.
D. A. Cozzens, Omaha, Neb.
Emons Johnson, Waterloo, Ia.
M. L. Gleason, Waterloo, Ia.
H. A. Boyson, Waterloo, Ia.
S. J. Sine, Waterloo, Ia.
Bertha Strong, Waterloo, Ia.
Ira Baker, Waterloo, Ia.
J. B. Green, Waterloo, Ia.
H. Shaw, Waterloo, Ia.
M. Holmes, Waterloo, Ia.
A. F. Whittle, Waterloo, Ia.
L. L. Parsons, Douds, Ia.
T. E. Culp, Lincoln, Neb.
A. J. Bush, Aurora, Ia.
M. Mortensen, Ames, Ia.
F. K. Hinze, Hanlontown, Ia.
Grant H. Nutting, Davenport, Ia.
J. A. Clutter, Ames, Ia.
Peter Peterson, Linn Grove, Ia.
N. J. Shadwick, Scarville, Ia.
H. E. Hagen, Lake Mills, Ia.
S. O. Soloman, Scarville, Ia.
W. F. Graham, New Hartford, Ia.
W. E. Mann, Goldfield, Ia.
K. G. McKay, Ames, Ia.
T. A. Clark, West Bend, Ia.
Sam Haugdahl, St. Peter, Minn.
O. S. Neal, Dexter, Ia.
H. R. Galbraith, Dubuque, Ia.
J. H. Stubbs, Sioux City, Ia.
H. C. Young, Lincoln, Neb.
F. A. Leighton, Des Moines, Ia.
J. E. McAffrey, Dundee, Ia.
J. W. Love, Minneapolis, Minn.
Clair Lillibridge, Manchester, Ia.
J. B. Simmons, Parkersburg, Ia.
E. H. King, Parkersburg, Ia.
J. R. Chittick, Des Moines, Ia.
B. C. Iliff, Des Moines, Ia.
Geo. Bowen, Mason City, Ia.
Nels Nielsen, Gilbertsville, Ia.
W. F. Nace, Arlington, Ia.
P. W. Johnson, Everly, Ia.
Martin Meyer, Madison, Wis.
J. L. Crump, St. Paul, Minn.
Andrew French, St. Paul, Minn.
R. E. Bantz, Otterville, Ia.
E. L. Gill, Independence, Ia.
Fred Meinhardt, Chicago, Ill.
A. C. Collyer, Chicago, Ill.
G. E. Allen, Fairfield, Ia.
E. M. Wentworth, Des Moines, Ia.
E. G. Parker, Sioux City, Ia.
C. J. Rohde, Manchester, Ia.
S. J. Alexander, Sioux City, Ia.
W. H. Maust, Waterloo, Ia.
W. H. Hanna, Waterloo, Ia.
H. J. Wilson, Waterloo, Ia.
A. Lowenfels, New York City.
Fred Brown, Parkersburg, Ia.
R. Duke Barnum, New York City.
J. E. Enright, Milwaukee, Wis.
A. F. Ulrich, Dubuque, Ia.
A. E. Fridley, Sumner, Ia.
H. R. Bullis, St. Ansgar, Ia.
M. V. Bickel, Mason City, Ia.
N. W. Miller, Waterloo, Ia.
H. J. Binger, Ryan, Ia.
G. A. Emery, Ryan, Ia.
T. C. Myers, Waterloo, Ia.
E. J. Smith, Waterloo, Ia.
J. H. Seba, Ames, Ia.
Wm. Meltzer, Ames, Ia.
K K. Moore, Waterloo, Ia.
Geo. Assink, Bassett, Ia.
N. A. Harvey, Cedar Falls, Ia.
W. A. Speer, Buckingham, Ia.
C. F. Brown, Waterloo, Ia.
G. A. Feely, Waterloo, Ia.
F. H. McMillan, Waterloo, Ia.
A. M. Black, Waterloo, Ia.
F. L. King, Waterloo, Ia.
D. A. Palmer, Cresco, Ia.
Fred Hessell, Waterloo, Ia.
E. H. Bryan, Hampton, Ia.
J. O. Ersland, Ladora, Ia.
W. R. Law, Waterloo, Ia.
H. D. Cowles, Waterloo, Ia.
L. Beal, Waterloo, Ia.
D. A. Parker, Des Moines, Ia.
J. F. Laude, Greenfield, Ia.
N. J. Olliver, Waterloo, Ia.
J R. Smith, Chicago, Ill.
T. H. Kenyon, Chicago, Ill.
J. J. Gallagher, Cedar Rapids, Ia.
A. Lockhart, Denver, Colo.
L. Woodiwiss, Sheldon, Ia.
C. F. Hillman, Cedar Rapids, Ia.
F. W. Bunch, Waterloo, Ia.
A. F. Kelley, Sioux City, Ia.
Fred Sharp, Des Moines, Ia.
G. V. Fowler, Waterloo, Ia.
D L. Porch, Davenport, Ia.
D. J. Coyne, Chicago, Ill.
W. L. Kendall, Cedar Rapids, Ia.
D. W. Lowry, Fredericksburg, Ia.
C. A. Lowry, Fredericksburg, Ia.
R. E. Leech, Independence, Ia.
E. R. Smith, Waterloo, Ia.
C. B. McClelland, Cedar Rapids, Ia.

MEMBERSHIP IOWA STATE DAIRY ASSOCIATION—Continued

Jno. Deerflinger, Cedar Rapids, Ia.
H. H. Beltz, Des Moines, Ia.
H. J. Burdick, Elgin, Ill.
R. V. McCauley, Waterloo, Ia.
F. W. Jacobs, Cedar Falls, Ia.
A. W. Chamberlain, Waterloo, Ia.
L. Larson, Carroll, Ia.
Francis Friday, Cromwell, Ia.
Ole T. Groe, Lake Mills, Ia.
Ira Finch, Fairbank, Ia.
E. H. Hansen, Maquoketa, Ia.
Bert Smith, Rowley, Ia.
I. Mitchell, Vinton, Ia.
H. H. Schroedemeier, Waverly, Ia.
V. A. Lagen, Dubuque, Ia.
J. J. Roach, Mason City, Ia.
Aug. Anderson, Ruthven, Ia.
Geo. W. Harben, Waterloo, Ia.
W. F. Carpenter, Manning, Ia.
Chris Schnecberger, Calmar, Ia.
L. M. Enger, Decorah, Ia.
R. G. Kingsley, Monona, Ia.
Thos. J. May, New York City.
R. A. Waugh, Des Moines, Ia.
F. L. Odell, Des Moines, Ia.
I. Woodring, Waverly, Ia.
Geo. Fowler, Waterloo, Ia.
Jno. Kruise, Miles, Ia.
H. J. Enlebrecht, Waterloo, Ia.
F. A. Ferguson, Waterloo, Ia.
J. J. Rodgers, Montezuma, Ia.
J. E. Lauredson, Albert City, Ia.
N. O. Dahlen, Northwood, Ia.
Nock Theede, Luzerne, Ia.
H. T. Landager, Conover, Ia.
Wm. H. Merner, Cedar Falls, Ia.
J. C. Rush, Williamsburg, Ia.
S. F. Kuntz, Ridgeway, Ia.
Jno. Engebretson, Scarville, Ia.
J. R. Roney, Decorah, Ia.
Henry Blossfield, Spragueville, Ia.
J. O. Jonnson, Burr Oak, Ia.
F. R. Kershner, Winthrop, Ia.
D. D. Dean, Ferguson, Ia.
W. A. Schrandt, Calmar, Ia.
E. C. Barrick, Janesville, Ia.
F. L. Kerr, Manilla, Ia.
A. J. Stubbs, Des Moines, Ia.
H. M. McElroy, Newton, Ia.
C. L. Fisher, West Liberty, Ia.
G. E. Hillier, Cedar Rapids, Ia.
Harry W. Gleim, Arlington, Ia.
LeGrand Gleim, Arlington, Ia.
Carl Nelson, Swea City, Ia.
F. H. Brockamp, Ft. Atkinson, Ia.
D. P. Marve, Andover, Ia.
Chas. E. McClue, Lanesboro, Ia.
H. M. McMasters, Iowa Falls, Ia.
H. B. Shirk, Spirit Lake, Ia.
C. S. Mitchell, Gladbrook, Ia.
J. W. Snow, Independence, Ia.
C. Hinkleman, Maquoketa, Ia.
Joe Brink, Marion, Ia.
L. R. Morford, Iowa City, Ia.
D. J. De Hough, Boyden, Ia.
H. G. Burtness, Hanlontown, Ia.
H. E. Kiester, Waterloo, Ia.
J. W. Bragstadt, Decorah, Ia.
J. P. Hummell, Waterloo, Ia.
T. L. Maxwell, Creston, Ia.
Chris Jensen, Toronto, Ia.
A. F. Radcliff, Ames, Ia.
H. C. Barker, Ames, Ia.
Rudolph Borninghaus, West Bend, Ia.
S. B. Nichols, Mason City, Ia.
E. W. Hellenschmidt, Waterloo, Ia.
Floyd Finney, Arlington, Ia.
J. W. Davis, Linn Grove, Ia.
H. C. Ladage, Plainfield, Ia.
Otto Dangelsen, Decorah, Ia.
A. O. Bailey, Waterloo, Ia.
W. C. Renner, Waterloo, Ia.
O. Renner, Waterloo, Ia.
W. E. Boxton, Waterloo, Ia.
J. W. Davies, Linn Grove, Ia.
Guy Sickels, Athleston, Ia.
F. H. Lightfield, Buckeye, Ia.
H. C. Thompson, Buffalo Center, Ia.
J. Wappleby, Sand Spring, Ia.
J. W. Waterman, Klemme, Ia.
H. R. Smith, Ackley, Ia.
C. H. Woodiwiss, Stacyville, Ia.
W. P. Kramer, Cedar Rapids, Ia.
H. H. Case, Bremer, Ia.
A. J. Andrews, Manchester, Ia.
H. A. Axtell, Strawberry Point, Ia.
S. S. Hudson, Titonka, Ia.
W. H. Kothbentel, Ackley, Ia.
Hans Helgasen, St. Olaf, Ia.
K. L. Allen, Marshalltown, Ia.
G. M. Miller, Fayette, Ia.
M. F. Styles, Cedar Falls, Ia.
W. H. Kroeger, Bennett, Ia.
H. M. Crocker, Osage, Ia.
J. B. Kacht, Waterloo, Ia.
L. H. Finch, Fairbank, Ia.
P. P. Stewart, Maynard, Ia.
J. S. Briggs, Fayette, Ia.
J. H. Larkin, Chariton, Ia.
J. W. McDougal, Chariton, Ia.
Henry Scheidmantle, Ossian, Ia.
E. E. Henderson, Central City, Ia.
Frank Albro, Estherville, Ia.
Wm. L. Koch, Brown, Ia.
W. T. Kepler, Davenport, Ia.
Albert Brandt, Gentilly, Minn.
W. J. Wagner, Halbur, Ia.
L. D. Williams, New Hartford, Ia.
P. H. Kelly, Forest City, Ia.
Wm. H. Gingrich, Oak Park, Ill.
Frank Bowdish, Randalia, Ia.
H. D. Reynolds, Mason City, Ia.
Ed Eitel, Hawkeye, Ia.
A. O. Pelly, Rowan, Ia.
J. A. Young, Waterloo, Ia.
A. L. Landis, Coleburg, Ia.
Jno. Jensen, Waterloo, Ia.
Jno. Corton, Waterloo, Ia.
Wilbur Miller, Waterloo, Ia.
Henry Rosenow, Sumner, Ia.
J. M. Lichty, Waterloo, Ia.
C. E. Bailey, Waterloo, Ia.
G. A. Anderson, Spring Grove, Minn.
Robt. Walsh, Zwingle, Ia.
H. W. Laude, Dubuque, Ia.
Jerome Feeney, Zwingle, Ia.
Joe Taylor, Dubuque, Ia.
Aug. Meyer, Lowden, Ia.
Geo. F. Kruckenberg, Lowden, Ia.
R. G. Walters, Hudson, Ia.
Arthur Hollis, Cedar Falls, Ia.
Harold R. Grim, Hudson, Ia.
Geo. H. Reifsnider, New York City.
J. W. Andorf, Hudson, Ia.
Chas. E. Bickley, Hudson, Ia.
Lawrence Wassem, Hudson, Ia.
Aug. Brandhorst, Hudson, Ia.
W. J. Wilson, Grundy Center, Ia.
B. R. Churchill, Grundy Center, Ia.
H. B. Addington, Cedar Rapids, Ia.
A. N. Wilson, Hudson, Ia.
Fred Christophel, Bremer, Ia.
Frank Thoren, Waverly, Ia.
H. Geiger, Waterloo, Ia.
G. F. Johnson, Hudson, Ia.
S. P. Hoover, Waterloo, Ia.
A. L. Smith, Hudson, Ia.
Jno. A. Wolstrom, Minneapolis, Minn.

MEMBERSHIP IOWA STATE DAIRY ASSOCIATION, 1912—Continued

C. M. Kite, Toledo, Ohio.
P. D. Nelson, Moorhead, Ia.
M. H. Thompson, Hudson, Ia.
C. A. Stensland, Saude, Ia.
R. H. Walker, Swea City, Ia.
Geo. C. Butterfield, Swea City, Ia.
Fred Thomas, Dike, Ia.
John Silverhorn, Hartley, Ia.
H. S. Hague, Zwingle, Ia.
B. H. Loeffers, Lemars, Ia.
C. M. Rayburn, Calmar, Ia.
A. O. Flagesrud, Calmar, Ia.
Iver Barlow, Calmar, Ia.
A. A. Olsen, Conover, Ia.
E. C. Hunhan, Okoboji, Ia.
J. W. Millness, Preston, Ia.
Henry LaFrenz, Hudson, Ia.
E. E. Sweitzer, Reinbeck, Ia.
R. E. Burns, Voorhees, Ia.
G. C. Terrill, Hudson, Ia.
H. H. Miller, Hudson, Ia.
Ed Gerlack, Fredericksburg, Ia.
A. F. Kolthoff, New Hampton, Ia.
W. H. Kolthoff, Fredericksburg, Ia.
Fred Kolthoff, New Hampton, Ia.
Chas. Waltz, Fredericksburg, Ia.
Carl Reedy, Malcom, Ia.
Ed H. Craney, Independence, Ia.
David Hansen, Cedar Falls, Ia.
H. R. Wright, Des Moines, Ia.
Nels Gylleck, Kenset, Ia.
W. C. Tucker, Ionia, Ia.
Carl Erickson, Nora Springs, Ia.
Albert Heyn, Cumberland, Ia.
J. L. Dawley, Kansas City, Ia.
Walter Faulkner, Hudson, Ia.
F. B. Kenney, Waverly, Ia.
W. K. Edwards, Williamsburg, Ia.
F. S. Procter, Fredericksburg, Ia.
J. A. Helling, Arlington, Ia.
Jno. H. Grim, Hudson, Ia.
Ernest Brandhorst, Hudson, Ia.
I. R. Sheffler, Tripoli, Ia.
S. M. Lumbus, Waterloo, Ia.
E. Euken, Cumberland, Ia.
J. C. Koch, Tripoli, Ia.
F. E. Cowles, Pulaski, Ia.
C. D. Becker, Waterloo, Ia.
J. W. Cagley, Charles City, Ia.
J. E. Lindering, Charles City, Ia.
Jno. Christiansen, Thornton, Ia.
Wilbur Day, Brighton, Ia.
H. R. Jacobs, Scotch Grove, Ia.
J. W. Swineburn, Delhi, Ia.
E. A. Ikenbury, Algona, Ia.
W. S. Wilcox, Mason City, Ia.
Ed Canfield, Fort Dodge, Ia.
F. G. Pratt, Des Moines, Ia.
J. S. Stubbs, Sioux City, Ia.
Fred Butz, Ridgeway, Ia.
M. E. Blair, Manchester, Ia.
R. E. Hollenbeck, Shell Rock, Ia.
Jesse W. Waltzman, Delhi, Ia.
Fred Pieplow, Aurora, Ia.
C. L. Whitcomb, Fredericksburg, Ia.
B. A. Weitnauer, Hazleton, Ia.
E. F. Briggs, Rockford, Ia.
H. F. DuBois, Nashua, Ia.
M. E. McMurray, Nashua, Ia.
Stuart Barnett, Charles City, Ia.
N. H. Nelson, Charles City, Ia.
J. C. Farnham, Rockford, Ia.
Olaf D. Loburg, Emmons, Minn.
S. S. Jeck, Atlantic, Ia.
H. O. Nelson, Swea City, Ia.
O. R. Beasted, Ames, Ia.
W. H. Jones, Ames, Ia.
M. J. Johnson, Shell Rock, Ia.
F. A. Salsbury, Vinton, Ia.
E. S. Pyburn, Vinton, Ia.
A. H. White, Oskaloosa, Ia.
B. E. Jenifer, Chicago, Ill.
S. E. Bentley, Waterloo, Ia.
C. R. Munger, Waterloo, Ia.
T. J. Julien, Algona, Ia.
Howard Shull, Williamsburg, Ia.
W. S. Butler, Williamsburg, Ia.
A. Whitacker, West Liberty, Ia.
W. O. Page, Beaver Creek, Wis.
G. A. Morgan, Spencer, Ia.
P. J. Cooney, New Hampton, Ia.
J. H. Prier, Dyersville, Ia.
C. C. Butler, Waterloo, Ia.
J. T. Handt, Waterloo, Ia.
L. B. Newburger, Ames, Ia.
Ed Shuna, Ames, Ia.
J. B. Morck, Aplington, Ia.
J. E. Workman, Sioux City, Ia.
G. A. Rosenberger, Iowa Falls, Ia.
H. J. Hansen, New Hartford, Ia.
W. A. Rizer, Scotch Grove, Ia.
C. A. Sutherland, Scotch Grove, Ia.
J. N. Kiburg, Scotch Grove, Ia.
E. C. Capper, Dumont, Ia.
W. L. Latcher, Fairbank, Ia.
M. Wamsley, Clarksville, Ia.
L. E. Darby, Clarksville, Ia.
C. Darby, Clarksville, Ia.
Fred Hillman, Lytton, Ia.
H. E. Corin, Waterloo, Ia.
R. E. Cobb, Independence, Ia.
W. N. McLennon, Owasa, Ia.
Jno. Gunn, Owasa, Ia.
Chas. Jackson, Owasa, Ia.
W. A. Allen, Owasa, Ia.
C. E. Fassler, Owasa, Ia.
Clarence Huffman, Owasa, Ia.
Jas. Taff, Jesup, Ia.
Florence Carter, Jesup, Ia.
Frank Brunner, Charles City, Ia.
Carey Jones, Iowa Falls, Ia.
W. E. Carver, Cedar Rapids, Ia.
Will Dilley, Fredericksburg, Ia.
S. Gatlin, Oskaloosa, Ia.
M. S. Stevens, Oskaloosa, Ia.
L. R. Leeper, Waterloo, Ia.
L. Morse, Waterloo, Ia.
F. E. Helleman, Fort Dodge, Ia.
E. Easem, Waterloo, Ia.
W. F. Shafer, Postville, Ia.

PART X

Extracts from State Dairy Commissioner's Report of 1912—Twenty-Sixth Annual

W. B. BARNEY, Commissioner

In looking up data in this office, we find that the first report made by the Dairy Commissioner was published with the proceedings of the Agricultural Society and that this report covered six months and was under date of November 1, 1886. On November 1, 1887, the Honorable H. D. Sherman made his second report to the governor, Wm. Larrabee, covering the first eighteen months following the enactment of the Dairy Law. This report showed that one assistant or clerk was employed. Little data had been kept as to the amount or value of Iowa dairy products up to this time. The report does not show much of promise in the situation.

Later enactments of the legislature made this department responsible for the enforcement of the following laws:

Pure Food Law.
Weight and Measure Law.
Agricultural Seed Law.
Concentrated Feeding Stuffs Law.
Condimental Stock Food Law.
Paint and Linseed Oil Law.
Turpentine Law.

The foregoing statement of expenses of this department includes the salaries of the Commissioner, Deputy Commissioner, State Dairy Inspector, four Assistant Dairy Commissioners, two Assistant Dairy Commissioners, and Food Inspectors, five Food Inspectors, and the clerical help in both Dairy and Food Departments. The janitor though paid by this department does the work in the Veterinary Department also.

We have not thought best to discuss matters in this report pertaining to the enforcement of these laws only as they are incidentally connected and have to do with the dairy work. It is obvious to all that a good sanitary law would be most helpful in bringing about better conditions in dairying as well as in all other branches of the various industries that are connected with food products. Therefore, our recommendation that a sanitary measure be enacted.

Up to the time of the Civil war a very large proportion of our people lived on farms. They had very little to sell and bought less. Many of us recall the days when a little sugar, tea, coffee and spices, was about all that we bought of the grocer or at that time the general store. There were practically no eatables offered for sale in cans or cartons, as many of the products that the housewife depends upon her grocer for now, were then prepared on the farm or in the home. The farmer raised his own grains taking them to the local mill to be ground, the miller taking his share in the shape of toll for the grinding, the farmer taking what was left, if there was any. Even in those days protection by the enactment of a just law would have been helpful. The farmer raised his own meats. Cattle, hogs and sheep were killed on the farm. The packer was practically unknown as the farmer cured his supply of meat during the winter for the ensuing year. Creameries had not been thought of, as all butter was made on the farm. We had no reason for the enactment of an "oleo" law as this product was not known.

Conditions have changed in the last half century and we have little idea of the man who raises our grains or grinds our flour, or who our butcher is, or who furnishes us with our butter, eggs, and poultry. The man who produces it to sell has little knowledge of who will consume it. This is a commercial age and naturally the man who has any kind of a product for sale desires to get out of it all that he possibly can. The larger percentage of the people engaged in the business are selling dairy and food products without misrepresentation or adulteration. There are people who for the sake of profit are unscrupulous enough to adulterate and misrepresent these products. Therefore, the necessity of enacting laws and the appointment of officers, whose duty it is to see that these laws are enforced as a matter of protection to the people.

HELPFUL ACTS OF THE THIRTY-FOURTH GENERAL ASSEMBLY.

The last legislature did much to strengthen the dairy and food laws as well as making possible the enforcement of all laws by giving the commissioner power to withhold or revoke licenses of the operators of the Babcock test or that of a milk dealer. Great discretion should, and has been, used in this work and only in extreme cases have we felt obliged to revoke these licenses. The great good that results from this kind of a law is that it may be used as a "Big Stick" in obliging offenders to comply with the law or discontinue business.

INCREASED REVENUE FROM LICENSES.

Two thousand, six hundred sixty-nine licenses to operate the Babcock test were issued the first year ending June 1, 1912. As a source of revenue this measure brought to the state treasury $6,682.50. The amount will undoubtedly reach $7,000.00 this year. The increased revenue of $744.00 from milk licenses (the law having been changed so as to apply to all municipal corporations instead of to cities of 10,000 or more people) should be added to the above, making a net increase of $7,426.50. This would pay the salary and expenses of three extra men.

The addition of two Assistant Dairy Commissioners in the department by the Thirty-fourth General Assembly has enabled us to care for the work in a much more satisfactory manner than ever before. The appointment of inspectors for the purpose of doing both dairy and food work was something of a departure from former custom, and the results have been most satisfactory.

EDUCATIONAL WORK.

The records show that speakers from this department have addressed over three hundred meetings within the last year. We have assisted the Iowa State Dairy Association by furnishing men as speakers on dairy trains. Many of the addresses have been before farmers' institutes, dairy picnics, pure food shows, women's clubs, etc.

INCREASE IN NUMBER OF CREAMERIES.

We have assisted in the organization of a number of new creameries as well as to help those that have needed assistance of various kinds. Our last report shows that Iowa had 494 creameries. This report shows an increase of 18 or a total of 512. We think this a very creditable showing. No branch of Iowa's manufacturing industries has more to do with the general prosperity of our people than this.

IOWA AS A BUTTER STATE.

We have tried to present for consideration of the Iowa dairymen a few concrete facts like the following:

Iowa produces annually 100,000,000 pounds of creamery butter, which at 30 cents per pound is worth $30,000,000.00.

The average Iowa cow produces 140 pounds of butter fat annually. An increase of fifty pounds per cow would mean an additional income to Iowa of $18,750,000. An increase of 100 pounds per cow would mean a net increase of $37,500,000.

The best Iowa county produces 7,542 pounds of creamery butter per square mile. If the entire state produced an equal amount on each square mile, Iowa would yield annually 418,558,875 pounds of butter worth $125,567,622.50 or more than four times its present output.

Herein lies Iowa's opportunity.

Is it not worth while?

We have tried to show that by the use of the scales and Babcock test and the weeding out process with a little better care and feed they could easily increase the production of their herd fifty pounds per cow per year. That by the use of a pure bred dairy sire they could breed up their herds and make a still further increase of fifty pounds per cow, making a net increased income of $37,500,000.00. It is in the last three or four years only that any considerable number of dairy sires have been shipped into the state. It is easy to understand that it takes several years before an increase in our production will be shown as most of the heifers, the result of the first cross, would not be bred to freshen before they are about three years of age. We maintain that a herd bred up by the use of a pure bred dairy sire is for all practical purposes, so far as the production of dairy products is concerned, as good as a pure bred herd, especially after four or five crosses. We always advise the use of a pure bred sire and never discourage the buying of some pure bred females if the dairyman has a few hundred dollars left after buying the sire.

SAVE THE CALVES.

We think the tendency among the dairymen to rush the calves to market as soon as they are dropped deplorable. We are greatly limiting the supply of dairy cows by this course. There is already a shortage of she stuff and the only remedy we know of is that of saving the larger share of the best heifer calves. Prices for good dairy cows were never higher nor the demand better than at this time, and if we wish to come anywhere near keeping up the supply for the future the heifers at least must be spared. If some change does not come at once and more calves can be raised the price of cows will be prohibitive, and as a result our supply of dairy products will be materially reduced.

NEW BUILDING A NECESSITY.

New quarters for this department should be provided. Within the last two or three years the work of this department has more than doubled. The help has, and will have to be increased as extra work is added. Permit me to call attention to the following, which is a fair indication of the growth of the department: The receipts turned over to the state treasurer for 1909 were $9,593.24; for 1910, $17,435.32; for 1911, $20,892.97; for the first nine months of 1912, January 1st to October 1st, $18,422.88. Besides the above, all the fines under the Pure Food Law are turned into the school fund in the different counties where prosecutions are made.

The quarters now occupied by this Department were never suitable to the work, and at this time are too congested to permit the best service. There are so many other departments in the capitol that are overcrowded that we sincerely hope that the Thirty-fifth General Assembly will see the necessity of the erection of a new building with the least possible delay.

NEW MEASURES RECOMMENDED.

The enforcement of the Weight and Measure Law was added to the duties of this Department late in the last session of the General Assembly. This has given us at least 25 per cent more work than we formerly had to look after. No additional help or increase in appropriation was given on this account. The enactment of an entirely new weight and measure law, a cold storage law, and a sanitary measure similar to the one passed by the senate at the last session are recommended as absolutely necessary. A net weight law would be most helpful in correcting some of the evils now existing.

If the members of the senate and house could be impressed with the fact that there is such a general demand for these laws as we know exists, they would not question the advisability of their enactment without delay.

SILOS.

Twenty-five years ago the silo was almost an unheard of thing in Iowa. The rapid increase in the price of land has brought about a condition which makes the farmer of today study economic problems in connection with his business the same as any other manufacturer. Leakages or wastes must be guarded against if the farmer is to make a profit on his high-priced land.

The dairy cow is the most economical producer of human food on the farm if fed and cared for in an intelligent manner. The milk of a cow that produces 10,000 pounds yearly contains 8,710 pounds of water, 290 pounds of fat, 485 pounds of sugar, 340 pounds of protein and 75 pounds of ash. Therefore, it is evident that the cow must consume large quantities of succulent feed to produce economically. The grass in summer provides her with this succulent feed but if the farmer is without a silo his cows are deprived of succulent feed for winter use. No man keeping six or more cows can afford to be without a silo regardless of the first cost.

Today the silo is no longer an experiment and practically all the leading dairymen of the country are using them. Some seven or eight thousand new silos have been built in Iowa alone during the past year which is sufficient evidence that they are a success. We are not suffering today in the rural districts for the want of finding new things so much as we are for the simple application of the things we already know.. Practically every farmer admits that the silo is a good thing but he puts off till tomorrow what he should do today and the waste of crop continues from year to year. In the corn belt where stalks are allowed to stand in the field, 40 per cent of the crop is wasted. It has been estimated that an acre of corn put up in the silo has a value of $45.00 while the same standing in the field and husked has a value of $27.00.

Thus it can be seen that the silo nearly doubles the value of the corn crop.

In feeding silage with alfalfa or clover hay, we have practically a balanced ration all raised on the farm. Experiments have been conducted at the Kansas and other stations which show that the grain ration can be cut down one-half the usual amount where alfalfa or clover hay and ensilage are fed. Ensilage always plays a prominent part in the economical ration of most farm animals and may the day be not far distant when the silo will be as common a sight on the Iowa farm as the corn-crib is today.

CITY MILK INSPECTION.

While there is yet much room for improvement, we do feel that the cities of Iowa today are receiving better milk than at any previous time. (We quote a recent editorial in the Breeders' Gazette of Chicago) "The city milk consumer wants clean milk and should have it. There is a marked and very healthy demand for better milk by the board of health in practically all cities and many of them are considering the enactment of regulations and restrictions for the producer of milk. Sometimes these are not wise, sometimes they remember that to conform to their rules requires an increased outlay and a higher production cost but most times they do not. When the city is ready to pay for clean, first class milk, it will be forthcoming, but the cheap milk and the clean, rich milk which most cities demand, is an impossible combination. It is not fair to the dairyman to ask that they furnish a superior product at an inferior price. The real solution for less bacteria is more cents per quart."

We feel that by the use of the government score card, we are enabled to efficiently improve the sanitary condition of the dairies and instruct the dairymen in the better care of their product. We surmise that the marked agitation for pure milk in Chicago is causing the cities of Iowa to wake up to the importance of the supervision of the milk supply, but we should remember that the conditions in the smaller cities are not what they are found to be in cities the size of Chicago, in this: that in the average Iowa city the milk is *consumed* before it is 24 hours old and probably 50 per cent of it within 12 hours from the time it is milked: whereas, in these larger cities where the milk is shipped in from long distances, the milk is usually 24 hours and often 48 hours or more old before it reaches the *consumer*.

There are two cardinal points that control the wholesomeness of milk, one is its age and the other the temperature at which it is kept and while the latter condition is overcome in a measure by the use of refrigeration cars, the age of the milk in these larger cities is always much increased before consumption and while our problems are similar, it is much simplified. In these towns and small cities, the bulk of the milk is produced within a short hauling distance and much of it even within the corporation.

The market milk question would be greatly simplified if, as Dr. Jacobi, in his president's address before the last meeting of the A. M. A., states that practically all mothers could nurse their own infants if they would and the use of artificial feed for infants could thus be eliminated. His remark that an action for homicide should be instigated in every case of death of a baby from want of its own mother's milk against the doctor, the nurse or the mother, seems harsh, but it is doubtless true.

We recognize the fact that in a large sense the question of clean milk is a public health question but we must also remember that it has an economic side and that the most efficient way to induce the dairyman to produce a sanitary milk is to increase their profits by furnishing for them a market whereby it may replace the inferior sort. Sanitary milk cannot be produced with the average Iowa cow, delivered and sold on the market today for less than 8 1-3 cents per quart. From personal observation I should estimate that 85 per cent of our market milk is sold for a little over 7 cents per quart (14 quarts for $1.00) or less. Possibly 14 per cent at 8 1-3 cents per quart (or 12 quarts for $1.00) and only a fraction of 1 per cent above this price.

Market milk has not increased in price proportionate to other dairy products in recent years.

The salutary effect of milk inspection is well illustrated by reference to the experience of the city of Rochester, N. Y. During the five years from 1887 to 1892 the infant mortality of that city ranged from 740 to 900 per cent. In 1892 efficient milk inspection was inaugurated and the infant mortality rapidly dropped until during the years from 1897 to 1904 it ranged between 400 and 460 per year.

We have been using quite extensively the government score card and we find that the average score of dairy farms in Iowa is less than 45 per cent out of a possible 100 per cent. This, of course, is quite low but not so low as that of the dairies supplying milk to Chicago which is nearly five points less and the dairies supplying the city of Washington score an average of only 43 points. While the use of the score card system is of recent date, all familiar with its use agree that by the proper use of this system, the dairies so scored do improve often quite materially from one to a subsequent visit of the inspector. By its use each particular item is gone over in detail and record made of conditions found and while some might be inclined to give undue importance to some one thing, this method gives to each item its proper and due weight and no more. In the city of Des Moines all the dairies supplying milk to the city were scored for the first time some two years ago and we have just recently finished scoring them again and find that the average increase of the score of these dairies has been in this time 13 points (or from 46 to 59).

The problems in market milk vary with the season. For instance; in the winter time when cows are housed, the sanitary conditions of the barn, (including the kind of floor, ventilation, provisions for light) have a marked influence on the quality of the milk; whereas, in the summer, this factor does not enter largely into the question for the reason that the cows are stabled only at milking time. But in the summer, we have the fly to deal with. This is a very unwelcome companion to the cow and only recently have the people been awakened to the fact that the fly is the one great menace to the public health. We find as much or more visible dirt or sediment in milk during the summer time than during the winter season but this summer sediment is not so deleterious to the milk as that of winter. The sediment in summer is usually caused by the cow wading or standing in water and fighting flies and throwing the muddy water on her udder and belly. This dries and at the time of milking falls into the pail in the form of black dirt or sand, whereas, the sediment found in winter's milk is usually dried manure.

The proper food for the infant mammal be it man, horse, cow, dog or sheep or porpoise is the milk of its own mother, but with the human infant, the best and most available substitute for its mother's milk is the milk of the cow. The ideal milk is that produced from perfectly healthy cows and handled in a strictly sanitary manner, milked clean, cooled immediately after milking and consumed at the earliest possible moment thereafter.

There is a tendency to demand that market milk shall be pasteurized. The attitude of this department on the question of pasteurization stated briefly is this: In the absence of a strictly first class raw milk, pasteurization is advisable and when we speak of pasteurization we mean efficient pasteurization. Efficient pasteurization is that process whereby all pathogenic germs in the milk are rendered inert and harmless by heating the milk to the lowest possible point. This can be accomplished by heating the milk to a temperature of 145 degrees F. for 25 to 30 minutes. Commercial pasteurization is usually not efficient pasteurization but is used simply for the purpose of killing the lactic acid bacteria and thus preventing the souring of milk. A milk that in its raw state could not be sold and delivered to the customer from the fact that it would become sour in a few hours can be pasteurized and remains sweet for a period of 24 to 48 hours. Pasteurization, however, does not make dirty milk clean milk. That the mother may be sure that the milk is properly pasteurized, we recommend the home pasteurization of milk. This is not a laborious task nor does it require great technical skill or extensive apparatus to pasteurize the amount of milk used by the baby. We feel that we should insist upon this process being used particularly during the hot months of summer. It can be accomplished thus:

See that the milk is sweet and clean when delivered to you. Place the bottle in a pail or similar receptacle, holding at least as large a volume of water as you have of milk. Place under the bottle a perforated can cover or some similar device to keep the bottom of the bottle from immediate contact from the bottom of this pail. Place this pail, filled with water up to near the level of the milk in the bottle, over the flame, and when the water has boiled, but not the milk, remove immediately from the stove and allow the milk bottle to stand in this water for twenty-five minutes. Then remove and cool as quickly as possible to 50 degrees F. or less. The milk bottle should be placed in a clean refrigerator in the compartment with the ice and not with the other articles of food in the refrigerator.

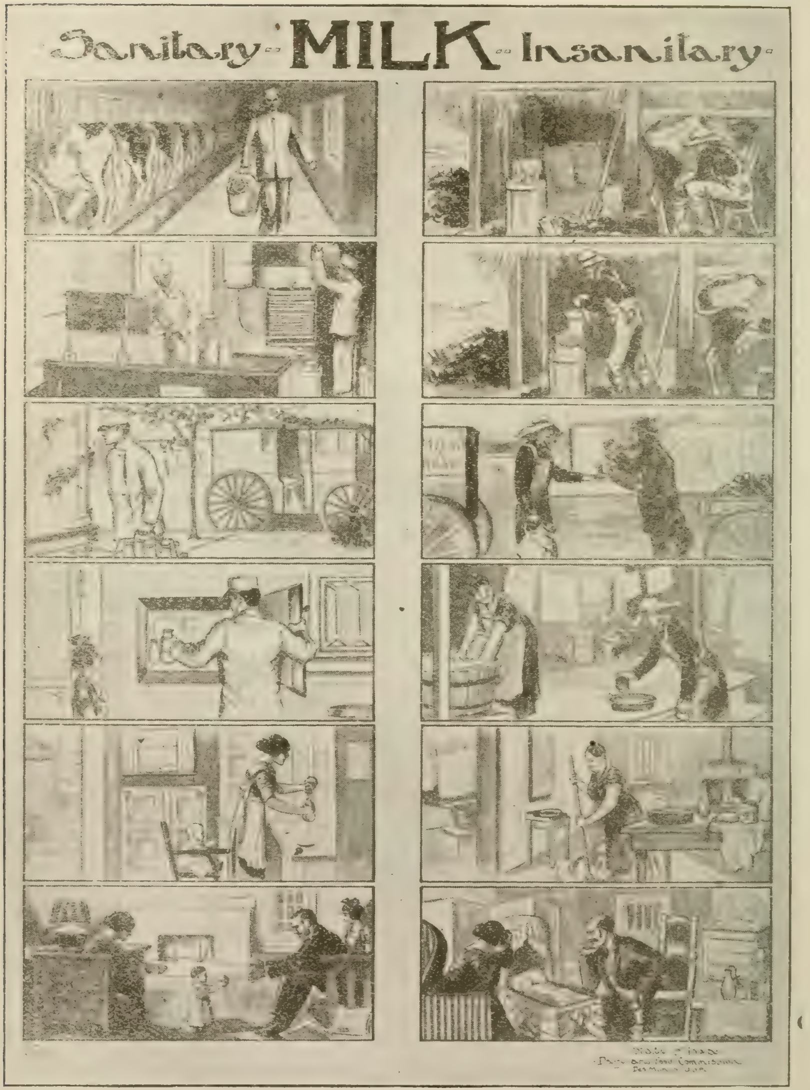
The consumer is apt to think there is nothing he can do. Observation teaches that when the patrons of the milk man are in the habit of visiting his dairy farm and looking over the conditions there he is apt to be more particular to keep things looking clean than he otherwise would. If you are a patron of his, it is certainly your privilege to do this and particularly if you have children in your family it is a duty you owe to yourself and them. If the dairy is clean, they will welcome such inspection and if it is dirty, they are apt to clean up. Ask your milkman for explicit instructions for finding his farm or the farm where the milk is produced. If he is expecting you, it often has the same effect as though you should actually go out.

Market milk should be delivered in bottles. You should have a place where the milkman may leave it out of the way of cats and dogs and in a cool, shady place. These bottles should be taken into the house as soon as delivered, put under the cold water faucet, and washed off on the outside. Then loosen the cap and place the bottle in the refrigerator or on the ice, inverting over the mouth of the bottle a common teacup. We score the dairyman for uncleanliness, and bad smelling surroundings, but it is a fact that most family refrigerators would be benefitted by more frequent cleaning and airing. The medical milk commission of the city of New York visited 4,300 homes in that city and found milk improperly cared for in 4,100 of these homes.

Table showing the number of milk licenses issued to city milk dealers for each year from 1905 to 1912. In each case the year ends on July 4.

	1905	1906	1907	1908	1909	1910	1911	1912
Number	827	803	1006	1078	1149	1106	1310	1908

Cities	Population	Inspectors
Boone	10,347	M. Healy, M. D.
Burlington	25,741	W. F. Schroeder
Cedar Rapids	32,811	Phil Pray
Clinton	25,577	
Council Bluffs	29,292	Peter Smith
Davenport	43,028	H. J. High
Des Moines	86,368	J. Howard Sasseen
Dubuque	38,494	F. J. Kennedy, D. V. S.
Fort Dodge	15,543	D. C. Benjamin
Keokuk	14,008	W. P. Sherlock, M. D.
Iowa City	10,091	C. S. Chase, M. D.
Marshalltown	14,000	J. A. Turner
Mason City	11,230	A. L. Wheeler, M. D.
Muscatine	16,178	John Tillie, D. V. S.
Ottumwa	22,012	B. W. Van Der Veer
Sioux City	47,848	E. C. Pape
Waterloo	26,693	W. W. Wyant


Sanitary MILK Insanitary
Dairy and Food Commission
Des Moines

IOWA STATE DAIRY ASSOCIATION.

The Iowa State Dairy Association, first with Hugh G. Van Pelt as expert, and since June 1st under the direction of E. S. Estel as expert, has worked throughout the entire state during the past year. It has been the main object of the association to reach as many farmers and dairymen as possible and give a general insight into the dairy conditions as they now exist in the state, and to advocate practical methods for future improvement.

The most important activities during the past year have been the dairy trains operating over the Illinois Central system and the Rock Island system north of the main line. Large and interested crowds met the trains at every stop and listened attentively to the talks and practical demonstrations given by the experts. Seventy-six towns were visited on the Illinois Central and one hundred and nine on the Rock Island, the speakers reaching 130,000 interested Iowa farmers.

Aside from the dairy trains, speakers were furnished for thirty-eight farmers' institutes during the winter. The creameries have been holding meetings and picnics all summer to encourage their patrons to first raise a more profitable type of dairy animal and then produce a better grade of cream for the factory and in view of these pressing needs thirty-two such meetings have been attended by speakers from the association. Considering all of the meetings held, the speakers representing the Iowa State Dairy Association have attended two hundred and fifty-five meetings and talked directly to over 150,000 farmers of the state.

ICE-CREAM.

Not long ago almost the entire dairy output of Iowa was made into butter and cheese. The dairy industry in this state has been growing rapidly and with its growth has come an equal increase in the manufacture of ice-cream. Today the ice-cream industry in the United States is worth considerably more than $100,000,000 annually. The profits to be derived in using cream for ice-cream when compared with butter making are almost double, thus it is an incentive for the small creamery man to use a part of his cream supply for ice-cream purposes.

During the past year the increase in the number of factories in this state has been great and the ice-cream expert in this department has been busy regulating the output and giving assistance to all factories that have so desired. The coming year the department expects to enforce the law regarding the standard of fat in ice-cream and will continue to lend all assistance possible to the ice-cream makers throughout the state.

A simple method for standardizing and one that can be applied by any maker is the "Square Method." It can be applied to any problem which may come up. For example, the cream you wish to standardize tests 39 per cent and the milk on hand 3.7 per cent, how much cream and how much milk will it be necessary to mix in order to get 20 per cent cream?

39 16.3
20
3.7 19.

In the center of the square place the per cent to which it is desired to standardize, at the upper left hand corner place the figure representing the richness of the cream used, and at the lower left hand corner place the per cent of fat in the milk. In order to get the amount of each to use in standardizing, all that is necessary to do in order to get the proportions is to simply subtract the 20 from the 39, giving 19, or the parts of milk necessary to use, and from 20 subtract 3.7 leaving 16.3, the number of parts of cream to use with 19 parts of milk. From this we see that in order to produce 20 per cent cream from 39 per cent cream and 3.7 per cent milk, it is necessary to use for every 16.3 pounds of cream, 19 pounds of milk, giving a total of 35.3 pounds of 20 per cent cream.

From this proportioning, it is possible to work any problem in standardization. If you wished 400 pounds of 20 per cent cream and had 39 per cent cream and 3.7 per cent milk to make it from, it is necessary to divide 400 by 35.3 which will give a factor with which to multiply the number of pounds of cream and milk required to make 35.3 pounds of 20 per cent cream, the sum of which will give 400 or 400 pounds of 20 per cent cream.

Another example using the same figures: Suppose you had 59.5 pounds of 39 per cent cream and wished to know how much 3.7 per cent milk would be required to reduce it to 20 per cent. This can be determined by dividing 59.5 by 16.3, the amount of cream used for every 19 pounds of milk giving a factor which multiplied by the 19 will give the number of pounds of milk to use.

Some will ask, "How is this method used in standardizing cream with skimmed milk?" The method is just the same, the skimmed milk being figured at zero per cent.

39 20=20—0
20
0 19=39—20

The proportions are the same as before for every 20 parts cream 19 parts skimmed milk are required to reduce it to 20 per cent.

It sometimes may occur that creamerymen may want to know how much skimmed milk it will be necessary to remove from an amount of whole milk in order to get 20 per cent cream. The square method still holds good except the proportions are a little different. Given 3.7 per cent milk to reduce to 20 per cent cream.

3.7 20
20
0 16.3

16.3 pounds of skimmed milk must be removed from each 20 pounds of 3.7 per cent milk in order to get 20 per cent cream.

Along this same line, a large number of the makers called upon have asked the question, "What must the cream used in ice-cream test so that when it is made up the ice-cream will come up to the required standard?" The sugar, flavoring material, and filler added to the cream adds weight to the mix—consequently, a reduction of the percentage of butter fat. Just how much the cream will be reduced depends upon the amount of ingredients added.

A rule that can be followed to determine the percentage of cream which must be used in order to conform to the standard, is as follows: Multiply the weight of the mix by the percentage of butter fat desired in the ice-cream and divide this by the number of pounds of cream used in the mix. To illustrate—suppose the mix consisted of 44 pounds of cream, 8 pounds of sugar, 4 ounces of filler, and four ounces of flavor, making a total weight of 52.5 pounds for the mix. In order to be on the safe side, at least a 12.5 per cent ice-cream should be made.

52.5×.125=6.56=pounds of butter fat which must be contained in the mix, or pounds of fat in the original cream. By dividing 6.56 by 44 we get .149 or 14.9 per cent, the test of the cream which must be used in the mix to give a 12.5 per cent ice-cream.

A large number of the makers visited bought their cream by the gallon and were paying prices equivalent to 41 to 55 cents per pound butter fat. This cream was bought on the supposition that it tested 18 to 24 per cent. In a great many instances the test fell considerably below these marks. From these observations, it seems that buying cream by the gallon unnecessarily increases the cost of manufacture since sweet cream could be had very generally over the state at prices ranging from two to ten cents above market quotation for butter to 40 cents per pound butter fat. Where butter fat was bought, 40 cents was the highest price paid.

Several makers in making up their ice-cream used these supposed tests as a basis in standardizing their cream and were surprised that their ice-cream did not test as much as they had thought. From this, we are led to believe that ice-cream makers who have been buying cream by the gallon would do well to pay by the test.

By standardizing the cream for ice-cream making the guess work can be eliminated and by paying for cream by the test the cost of manufacture should be reduced.

COW TESTING.

The yearly test of the dairy cow has increased in popularity during the past year, and we are beginning to realize that it is through the individual that we must build the foundation for more and better dairy animals. It is pleasing to report that during the past month a number of cows in different parts of the state have finished records of 600 to 650 pounds of butter fat for the year. W. W. Marsh of Waterloo, Iowa, has again continued his offering of $1,000.00 for yearly tests to be conducted by the Iowa State College under the supervision of the Iowa Cow Culture Club. This year there are 75 cows entered in the test.

BOOST FOR BETTER QUALITY.

Each year we become more impressed with the fact that health is largely governed by the quality of the food we eat. Both milk and cream are consumed in a raw state and no articles of our diet are such harbingers of disease producing bacteria if exposed to them at a low temperature. It is very important that the producer reduce the temperature of the milk as soon as it is drawn or after separation, to a temperature of 50 degrees or lower, and keep it in a sanitary place. When it is passed on to the wholesaler or retailer it must be kept under the same conditions and the consumer must not disregard these same precautions up to the time the milk or cream is placed on the table.

It is a very deplorable fact that large quantities of the cream produced in this state have become greatly deteriorated in quality and in some cases almost decomposed, before it reaches the creamery. Such cream cannot be made into first grade butter and sooner or later the producer has to suffer for his negligence in the care of his cream. In view of this fact, the Dairy and Food Department have issued 50,000 copies of a bulletin called, "Care of Cream on the Farm" and also 15,000 copies of another bulletin called "Care of Milk and Cream in the Home," either of which may be obtained upon request.

"The Dairy and Food Commission of the state of Iowa will use every means to bring about the grading of cream and paying therefor according to quality or grade. The best interests of dairying in this state demand that this system be adopted, and the following grades are hereby established:

"*Special Grade Cream* is hand separator cream showing not more than .15 per cent acidity, free from bad odors, not over two days old in warm weather and not more than three days old in cold weather and testing 25 per cent or above.

"*First Grade Cream* is hand separator cream reasonably sweet, free from bad odors, not over three days old in warm weather and not over four days old in cold weather, and testing 25 per cent or above.

"*Second Grade Cream* is cream not reasonably sweet, over three days old in warm weather and over four days old in cold weather, is not of good flavor, hand skimmed and water separated, and testing less than 25 per cent butter fat."

WHY TESTS VARY.

Many things, both separately and collectively, tend to cause variations in milk and cream testing. Those who are not familiar with the Babcock test look upon it with a certain degree of awe, see in it some mysterious contrivance to baffle the producer, while in reality it is a much simpler machine and more easily understood and operated than half the machines used on the modern farms today. Any person of ordinary intelligence can learn to operate the Babcock test in a comparatively short time. It is more a test of care and accuracy than it is any great understanding of chemical action. It is quite easy for a dishonest man to manipulate the test in different ways, and so much of this has been done in recent years that different states have passed very drastic laws to punish the offender as well as protect the farmer and the honest operator. Today the chances for dishonesty have been reduced to the minimum by the passage of the aforementioned laws and by the installation of many testers on the dairy farms.

The variations to be found in testing milk are due to several causes. The fat content of milk varies much more than any other solid found in it. When any appreciable difference occurs in the fat content of the milk of one or more cows, usually some definite reason can be supplied, but once in a while a variation will occur when there seems to be no valid explanation for it. The addition of a fresh cow's milk will often increase or perhaps reduce the average fat content of the whole herd. The different breeds of cows govern the fat content largely, there being quite a decided difference between the Holsteins and Jerseys in that respect. The period of lactation also affects the fat content. For the first couple of months after calving, the fat content of the milk is a little higher than the following two months, due to the fact that the cow is apt to take a quantity of the accumulated fat from her back and place it in the milk. In about two months the cow is usually in a normal condition again and for the following two or three months the fat content is apt to decrease. From this time on to the end of the lactation period the amount of milk will usually decrease and the fat content will slightly increase. The injection of a cow into the herd at any time during her lactation period will usually cause a slight change in the fat content of the milk of the whole herd. These are some of the reasons that form the bone of contention between the producer on the one hand and the city milkman and the creameryman on the other.

In cream testing we have about the same variations to contend with and then several more. It is next to impossible to run a separator and keep the test the same at all times. The milk may be a little warmer one day than another; the rate of inflow may be a little greater one day than another, perhaps the machine may be turned a little faster or a little slower than usual or perhaps more or less water used to flush out the bowl; all have their effects upon the per cent of butter fat.

Generally speaking, the cream screw should be turned in a little in the spring as the cows are usually fresh at this season of the year and are eating large quantities of succulent feeds high in per cent of water, which has a tendency to reduce the fat content and if the cream screw is left the same as for winter use, the percentage of butter fat will fall off. We cannot feed fat into milk, but as a general rule the healthy condition of the fresh cow and the stimulus she receives from being put on green grass in the spring, causes her to give a larger quantity of milk, somewhat less in percentage of fat than she does in the fall toward the end of the lactation period.

It is far better to send a fairly heavy cream to the creamery, that is, a cream with a fat content of from 30 to 40 per cent. If a much heavier cream is separated there is a loss incurred in handling when pouring from one vessel to another. If a very thin cream is separated the farmer is sending a quantity of skim milk to the creamery that could be well utilized at home and for which he is receiving no remuneration. Also if this thin cream becomes very sour before a test can be made, the large per cent of the milk contained therein will curdle and prohibit the possibility of obtaining a representative sample and an accurate test.

CREAMERY BUTTER.

The amount of creamery butter manufactured within the state as reported by the 494 creameries for the year ending June 30, 1912, shows some decrease as compared with the year previous. According to the best reports obtainable, the creameries of Iowa manufactured 91,738,573 pounds of butter which is a decrease of 4,957,011 pounds. The decrease in the butter output does not furnish evidence that dairying is on the decline in this state but merely reveals that the milk and cream produced on the farms is being marketed through other channels. The creameries of Iowa report having manufactured more than double the amount of ice-cream that was manufactured the previous year, the total amount being given as 519,890 gallons. We are unable to secure accurate figures showing amount of butter fat annually used for ice-cream purposes but a conservative estimate places this amount at 2,520,000 pounds. The steady growth of the ice-cream trade has had a tendency to reduce the amount of butter manufactured and this reduction will continue to exist until changing industrial conditions cause the farmers to again resort to the production of milk and cream as the best means of converting their crops into a commodity that will bring them the most money. It is a notable fact that the production of butter has increased during those years when the price of farm crops has been lowest and to a certain extent the reverse has been true when crops were good and high prices ruled. The production of milk and cream necessarily demands close application and painstaking work on the part of the farmers and a period of prosperity makes it possible for many farmers to realize a good income without giving their attention to the production of milk. It has been said that the average man is as lazy as he dares to be and this statement comes very nearly being illustrated in connection with the production of butter fat by the average farmer. On many farms, dairying has been conducted as a side line and when high prices rule and the farmers generally are very prosperous, they feel in many cases that they are justified in discontinuing their milking operations on account of the exacting nature of the work. When a period of financial depression affects the general prosperity of the farmers, we believe large numbers of our farmers will again look to dairying as the most profitable branch of their farming operations. When this occurs we can reasonably expect a large increase in the production of creamery butter and the improved cattle and better methods which have been introduced during the past few years will make the production of butter fat more profitable than it has been at any time in the past and will lend encouragement to many to adopt the production of butter fat as their special branch of agriculture.

RENOVATED BUTTER.

Since the price of butter has been extremely high, considerable quantities of process butter, otherwise known as renovated butter, have been sold within this state. We believe some rigid legislation should be enacted regulating the sale of this product. Numerous cases have been called to our attention where persons representing themselves to be farmers have procured this butter in large quantities and after repacking it in jars or other containers offered the same as country butter and many persons have purchased this product through such misrepresentation who could not be induced to use it were its true character known. We believe this product should be sold under some such labeling requirements as are provided for the sale of oleomargarine and severe penalties should be attached for the sale of renovated butter as country butter or in any other manner than that prescribed by the statute.

OLEOMARGARINE.

We have been unable to obtain accurate figures showing the sales of oleomargarine in the state of Iowa but we find that the number of dealers in this product has increased from 1,623 in 1910 to 2,182 for the year ending June 30, 1912. It is reasonable to suppose that the consumption of oleomargarine has increased at practically the same rate as have the sales of licenses to dealers. This department made but one successful prosecution during the past twelve months for violation of the oleomargarine law and this was for the sale of a product having yellow color in imitation of butter. The present oleomargarine law appears to be very satisfactory and dealers generally show a disposition to comply with the law.

CHEESE.

This department has received annual reports from seven cheese factories and the output of cheese is given as 346,456 pounds for the entire state. This shows an increase of 122,032 pounds over last year but this is only a small percentage of the amount consumed in this state. While the production of cheese in Iowa may never prove to be of great importance, we think the state should supply the home demand for cheese and we have reason to hope that this industry will receive enough attention from persons interested in the manufacture of cheese to enable them to at least meet the requirements of our own population.

GENERAL REVIEW OF THE BUTTER MARKET.

The market quotations for the best grades of table butter have shown a higher average during the past year than at any time since 1882, the average for the twelve months ending October 1, 1912, being 31.21 cents per pound for extra creamery. The average for the previous year was 26.09 cents but the comparison is hardly on an equal basis as the latter figure is based on the second grade quoted on the New York market while the first figure given is on this basis until May 13th when the specials class was abolished and the highest quotation was changed to extra grade. The difference between these two grades has been on the average about one-half cent per pound, hence the average for the year would be about 31 cents per pound based on the grade of extras. The high price realized for the best grades of creamery butter is not surprising when we take into account the limited supply of fine butter and the price quoted for the best grade is really not high by comparison with quotations of former years when we consider the percentage of increase in the price of other food products and the like increase in value of feeds that are consumed by dairy animals. Herewith we give a table showing the average price of butter by months covering a period of twelve years.

SHOWING AVERAGE MONTHLY PRICE OF EXTRA CREAMERY BUTTER IN NEW YORK MARKET.

Month	Twelve months ending Oct. 1, 1901	Twelve months ending Oct. 1, 1902	Twelve months ending Oct. 1, 1903	Twelve months ending Oct. 1, 1904	Twelve months ending Oct. 1, 1905	Twelve months ending Oct. 1, 1906	Twelve months ending Oct. 1, 1907	Twelve months ending Oct. 1, 1908	Twelve months ending Oct. 1, 1909	Twelve months ending Oct. 1, 1910	Twelve months ending Oct. 1, 1911	Twelve months ending Oct. 1, 1912
October	$.2190	$.2200	$.2362	$.2100	$.2095	$.2184	$.2611	$.2915	$.2673	$.3064	$.2996	$.3044
November	.2487	.2412	.2650	.2317	.2481	.2350	.2762	.2725	.2957	.3095	.3117	.3391
December	.2540	.2510	.2920	.2423	.2688	.2480	.3164	.2887	.3131	.3490	.2906	.3679
January	.2262	.2425	.2762	.2270	.2910	.2650	.3080	.3069	.3152	.3344	.2639	.3810
February	.2250	.2862	.2600	.2517	.3218	.2709	.3254	.3233	.3009	.2964	.2611	.3114
March	.2212	.2810	.2860	.2452	.2807	.2700	.3061	.2840	.2953	.3263	.2391	.3064
April	.2099	.2825	.2725	.2284	.3008	.2188	.3069	.2855	.2708	.3113	.2111	.3235
May	.1900	.2275	.2200	.2012	.2371	.2017	.2501	.2369	.2658	.2843	.2187	.3043
June	.1925	.2195	.2160	.1803	.2049	.2022	.2360	.2329	.2581	.2792	.2499	.2731
July	.1960	.2131	.2012	.1767	.2056	.2062	.2481	.2243	.2623	.2831	.2510	.2713
August	.2050	.1990	.1940	.1793	.2111	.2257	.2488	.2285	.2719	.2938	.2631	.2663
September	.2110	.2170	.2075	.1947	.2068	.2462	.2781	.2388	.3013	.2989	.2655	.2976
Av. value per lb. per year	$.2165	$.2400	$.2438	$.2140	$.2489	$.2340	$.2759	$.2762	$.2848	$.3060	$.2609	$.3121

TABLE NO. II.

TABLE SHOWING NUMBER OF POUNDS OF MILK RECEIVED, NUMBER OF POUNDS OF CREAM RECEIVED, POUNDS OF BUTTER MADE AND POUNDS SOLD IN IOWA AND OUTSIDE THE STATE SO FAR AS REPORTED BY THE CREAMERIES.

Counties	Number reporting	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold io patrons	Pounds sold in Iowa	Pounds sold outside the state
Adair	3	45,226	1,652,461	577,139	25,338	26,056	525,745
Adams	1	------------	270,700	97,567	1,772	11,342	84,453
Allamakee	8	------------	7,047,519	1,793,983	34,823	119,992	1,639,168
Appanoose	------	------------	------------	------------	------------	------------	------------
Audubon	8	------------	2,792,783	1,120,808	58,550	22,839	1,039,419
Benton	8	12,000	1,470,494	606,673	6,097	106,347	494,229
Black Hawk	15	28,848,602	4,647,374	2,713,176	168,828	664,453	1,879,895
Boone	3	565,144	613,952	250,771	10,919	93,785	146,067
Bremer	25	74,327,265	554,965	3,393,278	334,508	168,444	2,890,326
Buchanan	10	18,648,067	2,175,355	1,463,321	117,178	189,676	1,156,467
Buena Vista	4	------------	2,271,820	749,653	12,725	45,730	691,198
Butler	14	13,057,680	4,722,522	1,518,800	108,046	69,794	1,340,960
Calhoun	5	238,200	1,588,783	973,426	19,563	11,737	942,126
Carroll	6	192,745	1,714,929	620,627	20,602	69,886	530,139
Cass	2	------------	1,272,443	433,899	2,284	65,155	366,460
Cedar	6	------------	652,797	219,603	13,676	117,674	88,253
Cerro Gordo	7	1,110,265	4,050,923	1,342,297	26,804	217,304	1,098,189
Cherokee	2	------------	669,306	166,260	913	65,973	99,374
Chickasaw	11	21,575,814	5,183,217	2,315,546	165,344	94,846	2,055,356
Clarke	------	------------	------------	------------	------------	------------	------------
Clay	9	954,257	2,308,856	853,517	56,130	38,787	758,600
Clayton	15	12,912,023	6,739,274	2,586,883	94,262	87,738	2,404,883
Clinton	5	276,036	1,897,624	1,167,974	20,468	187,426	960,080
Crawford	1	------------	397,903	150,268	------------	7,268	143,000
Dallas	2	7,833,007	1,227,264	398,264	148,246	136,140	113,878
Davis	1	------------	12,858	4,286	------------	65	4,221
Decatur	1	------------	1,039,308	421,631	------------	11,812	409,819
Delaware	16	21,548,537	31,508,878	2,990,056	187,054	229,073	2,573,929
Des Moines	1	------------	28,600	8,590	315	5,275	3,000
Dickinson	4	27,640	1,189,322	406,120	18,754	20,257	367,109
Dubuque	18	6,120,145	9,520,633	3,323,473	78,791	448,971	2,795,711
Emmet	5	654,894	1,556,497	565,565	37,408	24,872	503,285
Fayette	21	45,049,853	5,675,440	3,870,714	268,323	257,454	3,344,937
Floyd	5	8,771,890	1,667,413	768,142	23,333	190,832	553,977
Franklin	7	456,144	3,658,533	1,123,321	56,732	16,479	1,050,110
Fremont	1	------------	88,291	39,776	95	3,455	36,226
Greene	1	61,398	281,295	112,485	2,688	17,995	91,802
Grundy	7	1,385,364	2,537,887	832,844	44,564	14,518	773,762
Guthrie	4	52,478	2,080,416	712,988	38,217	35,698	639,073
Hamilton	5	1,942,952	1,211,501	445,152	35,006	15,519	394,627
Hancock	8	------------	4,421,539	1,399,777	45,237	30,058	1,324,482
Hardin	6	856,942	4,072,517	1,355,573	72,045	66,587	1,216,941
Harrison	1	------------	543,104	178,276	450	35,000	142,826
Henry	------	------------	------------	------------	------------	------------	------------
Howard	9	2,476,340	4,472,041	1,590,951	34,539	23,453	1,532,959
Humboldt	6	161,292	3,025,682	981,448	31,376	14,292	935,780
Ida	1	------------	239,101	90,267	------------	------------	90,267
Iowa	8	313,566	2,022,017	659,764	50,276	38,007	571,481
Jackson	11	1,186,475	4,969,019	1,630,228	45,631	74,272	1,510,325
Jasper	2	665,867	449,367	167,968	13,646	26,249	128,073

TABLE NO. II—CONTINUED

Counties	Number reporting	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold in Iowa	Pounds sold outside the state
Jefferson	1	------------	327,000	109,000	250	59,750	49,000
Johnson	------	------------	------------	------------	------------	------------	------------
Jones	8	2,002,726	5,760,976	1,777,536	84,384	70,198	1,622,954
Keokuk	2	------------	810,000	210,000	------------	60,000	150,000
Kossuth	18	2,065,999	5,320,949	1,877,732	144,600	73,375	1,659,757
Lee	1	------------	2,320,089	743,363	------------	175,000	568,363
Linn	9	3,049,274	6,603,808	2,105,959	61,292	531,411	1,513,256
Louisa	1	------------	74,250	23,357	600	8,000	14,757
Lucas	------	------------	------------	------------	------------	------------	------------
Lyon	3	------------	2,123,804	732,416	1,320	13,609	717,487
Madison	------	------------	------------	------------	------------	------------	------------
Mahaska	1	------------	980,548	293,510	------------	------------	293,510
Marion	1	126,877	321,644	113,477	------------	18,057	95,420
Marshall	4	------------	2,274,151	684,950	21,690	181,611	481,649
Mills	1	------------	199,650	72,596	479	25,657	46,460
Mitchell	7	1,081,100	4,161,618	1,259,016	105,119	309,340	844,557
Monona	1	------------	136,108	65,394	612	416	64,366
Monroe	1	------------	328,000	100,000	400	60,000	39,600
Montgomery	------	------------	------------	------------	------------	------------	------------
Muscatine	2	2,920,830	1,300,000	300,000	------------	75,000	225,000
O'Brien	5	81,025	2,135,907	756,317	27,384	71,640	657,293
Osceola	7	------------	1,481,129	520,152	13,185	17,650	489,317
Page	1	------------	1,446,909	482,303	------------	74,556	407,747
Palo Alto	13	6,430,797	4,182,959	1,497,909	130,504	72,152	1,295,253
Plymouth	4	167,505	1,090,568	369,336	8,643	82,448	278,245
Pocahontas	4	------------	946,357	347,317	15,308	8,185	323,824
Polk	3	1,102,400	10,909,817	3,743,092	------------	1,126,240	2,616,852
Pottawattamie	2	365,000	2,920,539	988,113	------------	100,000	888,113
Poweshiek	7	94,720	1,237,867	385,276	6,722	107,268	271,286
Ringgold	------	------------	------------	------------	------------	------------	------------
Sac	5	41,085	1,673,225	588,157	18,851	22,185	547,121
Scott	2	25,000	1,328,716	332,031	400	24,067	307,564
Shelby	6	------------	1,194,607	424,974	17,152	21,697	386,125
Sioux	8	216,913	4,673,738	1,578,133	23,861	38,313	1,515,959
Story	[illegible]	2,235,855	2,544,863	832,763	96,087	94,353	642,323
Tama	3	------------	1,133,149	109,685	11,559	------------	98,126
Taylor	1	------------	2,487,240	829,080	13,210	32,400	783,470
Union	2	------------	531,483	553,098	1,298	106,844	444,956
Van Buren	------	------------	------------	------------	------------	------------	------------
Wapello	1	------------	1,862,121	620,707	------------	119,057	501,050
Warren	------	------------	------------	------------	------------	------------	------------
Washington	1	900,000	------------	------------	------------	------------	------------
Wayne	2	------------	2,031,142	721,088	5,354	40,319	675,415
Webster	2	------------	1,506,370	523,981	5,296	101,210	417,475
Winnebago	7	11,803,977	3,589,062	1,609,037	116,140	75,844	1,417,053
Winneshiek	11	------------	7,120,640	2,042,644	23,217	48,125	1,971,302
Woodbury	4	176,800	25,148,526	9,774,239	8,550	713,451	9,052,238
Worth	9	498,201	4,323,624	1,316,615	126,654	24,286	1,165,675
Wright	6	------------	6,339,299	1,131,092	21,494	48,059	1,060,939
Total	[illegible]	[illegible]	269,076,975	91,738,573	3,643,171	9,051,558	79,043,844

TABLE NO. III.

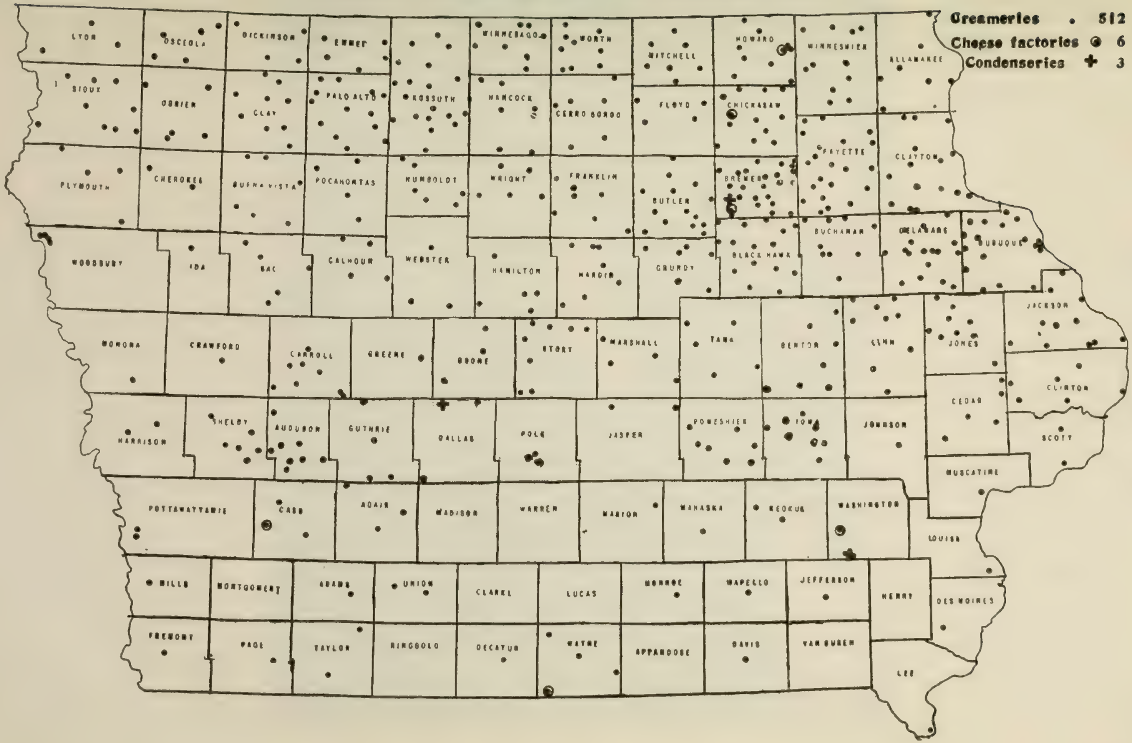
TABLE SHOWING NUMBER OF HAND SEPARATORS, NUMBER OF PATRONS AND NUMBER OF COWS.

Counties	No. of creameries reporting hand separators	Receive cream by rail	Hand separators reported	No. of creameries reporting patrons and cows	No. of patrons reported	No. of cows reported
Adair	3	----------	771	3	728	6,074
Adams	1	----------	203	1	214	1,498
Allamakee	8	----------	1,359	8	1,723	13,479
Appanoose	----------	----------	----------	----------	----------	----------
Audubon	8	----------	1,199	8	1,204	9,232
Benton	7	----------	809	7	852	6,042
Black Hawk	14	3	2,605	14	4,384	32,917
Boone	3	----------	314	4	366	2,398
Bremer	6	----------	388	24	912	18,002
Buchanan	10	1	996	10	1,431	8,922
Buena Vista	4	----------	1,207	4	1,212	8,499
Butler	14	1	1,653	13	1,806	12,036
Calhoun	5	3	1,545	5	1,545	11,040
Carroll	6	----------	943	6	943	5,604
Cass	2	1	583	2	583	3,761
Cedar	5	----------	457	5	490	3,054
Cerro Gordo	6	1	1,323	6	1,474	9,808
Cherokee	2	----------	410	2	420	2,940
Chickasaw	9	----------	1,112	11	1,974	18,494
Clarke	----------	----------	----------	----------	----------	----------
Clay	9	----------	1,013	9	1,087	7,677
Clayton	14	1	1,861	15	2,430	19,642
Clinton	5	2	930	5	980	7,110
Crawford	1	1	214	1	214	1,284
Dallas	2	1	570	2	590	3,600
Davis	1	1	150	1	200	1,200
Decatur	1	1	562	1	562	3,372
Delaware	13	1	1,804	15	3,002	21,924
Des Moines	1	----------	50	1	50	300
Dickinson	4	----------	529	4	533	3,504
Dubuque	17	3	3,503	18	6,998	56,616
Emmet	5	----------	404	5	447	3,745
Fayette	15	----------	1,774	21	4,837	35,872
Floyd	5	----------	785	5	1,007	6,750
Franklin	6	1	848	7	1,091	8,071
Fremont	1	----------	382	1	100	425
Greene	1	----------	214	1	214	1,498
Grundy	6	1	680	6	710	5,636
Guthrie	4	----------	798	4	915	5,910
Hamilton	4	----------	1,355	4	700	3,924
Hancock	8	----------	1,209	8	1,215	10,176
Hardin	6	1	2,484	6	2,518	13,073
Harrison	1	1	270	1	300	2,500
Henry	----------	----------	----------	----------	----------	----------
Howard	9	----------	1,480	9	1,563	12,750
Humboldt	6	2	1,541	6	1,541	11,162
Ida	1	1	100	1	100	700
Iowa	8	----------	1,109	8	749	4,529
Jackson	11	1	1,749	11	1,885	17,390
Jasper	2	----------	250	2	303	1,750
Jefferson	1	1	250	1	275	2,100
Johnson	----------	----------	----------	----------	----------	----------
Jones	8	2	1,533	8	1,585	13,310

TABLE NO. III—Continued

Counties	No. of creameries reporting hand separators	Receive cream by rail	Hand separators reported	No. of creameries reporting patrons and cows	No. of patrons reported	No. of cows reported
Keokuk	2	1	150	2	250	1,750
Kossuth	18		1,603	18	1,684	14,484
Lee	1	1	825	1	825	5,775
Linn	9	1	2,138	9	2,708	18,787
Louisa	1		54	1	66	462
Lucas						
Lyon	3	1	790	3	840	5,920
Madison						
Mahaska	1	1	326	1	326	2,282
Marion	1		295	1	394	1,425
Marshall	4	1	738	4	934	6,517
Mills	1		125	1	125	885
Mitchell	7		1,022	7	1,466	9,836
Monona	1		96	1	96	700
Monroe	1		88	1	88	704
Montgomery						
Muscatine	1	1	450	2	590	4,000
O'Brien	5		922	5	936	6,718
Osceola	5		595	5	595	4,780
Page	1	1	643	1	643	4,501
Palo Alto	13		1,108	13	1,371	11,183
Plymouth	4		611	4	625	4,407
Pocahontas	4		508	4	511	2,754
Polk	3	3	8,789	3	9,389	65,723
Pottawattamie	1	2	30	1	36	252
Poweshiek	7	1	672	7	683	4,276
Ringgold						
Sac	5		864	5	918	5,376
Scott	2	2	477	2	477	3,409
Shelby	6		750	6	751	4,312
Sioux	8		1,936	8	1,960	12,946
Story	8		1,023	8	1,043	7,768
Tama	3		219	2	211	1,180
Taylor	1	1	200	1	200	1,400
Union	2	1	759	2	759	4,713
Van Buren						
Wapello	1	1	689	1	689	4,723
Warren						
Washington						
Wayne	3	1	737	3	1,120	7,604
Webster	3	1	658	3	681	4,748
Winnebago	7		1,011	7	1,307	12,234
Winneshiek	11		2,030	11	2,324	18,965
Woodbury	4	4	12,940	4	12,940	90,370
Worth	9		1,061	9	1,066	8,376
Wright	5	1	825	5	625	6,750
Total	461	58	97,041	492	113,215	834,295

Map of Iowa showing location of creameries, cheese factories and condenseries.


Creameries • 512
Cheese factories ◉ 6
Condenseries ✚ 3
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
OBRIEN
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE

GUERNSEY COW AND TWIN CALVES
at the Iowa State Fair. 1912

PART XI

EXTRACTS FROM

STATE VETERINARY SURGEON'S REPORT OF 1912

EIGHTH BIENNIAL REPORT

J. I. GIBSON, State Veterinary Surgeon

INTRODUCTION.

The object of this department has been to aid in the development of the live stock industry of the state by preventing, as far as possible, the introduction of contagious or infectious diseases, enforcing measures to control, suppress and eradicate diseases that are already prevalent within the state and to investigate the cause and nature of any disease which appears to be a menace to the live stock industry or public health.

The establishment by the legislature of a commission of animal health has been an important step in the handling and prevention of diseases in live stock. While this commission may make such rules and regulations as they may deem necessary for the proper control of diseases they have absolutely no power to inflict penalty for violation of rules nor dispose of an animal known to be affected with an infectious or contagious disease. The lack of proper power on the part of the department to dispose of such diseased animals is a source of considerable annoyance and criticism. While the statute provides for the appraisal of diseased animals there is no fund set aside for payment of such claims nor could diseased animals be appraised and disposed of under the section referred to except by gaining the consent of the owner of such diseased stock. The rules drawn up by the Animal Health Commission have been a means of barring diseased animals from the state and numbers of animals shipped into the state were found to be diseased when the necessary tests provided for in such rules were applied, these animals being properly disposed of, thereby protecting the native live stock from probable infection. As will be noted from the statistical report contained herein, there were 16,117 head of live stock imported into this state, during the six months between January 1, 1912, and July 1, 1912, all of which passed an inspection and it will be readily seen that the vast movement of stock would be a source of great infection were it not for the present importation requirements.

The tuberculosis situation has assumed little, if any headway, being met on all sides by opposition. The better class of stock raisers evading a general test and eradication of the disease from their premises, being in a position, as they are, to dispose of a suspected animal to some innocent purchaser as a healthy animal and receive the price an animal in first class condition would bring. The poorer class of people who have but a limited number of animals and depend more or less on their cattle for a livelihood oppose the test for fear the disease would be found in their herds and would prefer to handle and feed such stock in ignorance of their possible condition rather than know the truth and abide by the consequences.

The present method of selling tuberculin and applying tests is far from beneficial to satisfactory results in eliminating tubercular cattle from herds or gaining assurance that cattle even when accompanied by tuberculin test records are free from tuberculosis.

Tuberculin is a very accurate and reliable diagnostic agent for the detection of tuberculosis but may be procured by the laity and the tests applied by careless, unscrupulous and incompetent parties. Cattle suspected of reacting to tests of this nature are disposed of as the owner may see fit, which is generally to some unsuspecting party, whereby the original owner shirks the loss and the animal is passed on to other premises where the disease may not have been previously in existence, and sets up a new area of infection.

Hog cholera has been more or less general over the entire state during the past two years and great interest has been taken in the matter. Owing possibly to the fact that the losses are more apparent than from some of the more obscure diseases such as tuberculosis and glanders where the animals can be dealt in and the loss and damage covered up.

This department has not given the disease the attention it demands for the reason that the funds of the department are very limited and emergencies of this kind cannot be met. Nothing further could be done than to establish quarantine on an infected herd from which little benefit could be derived as the disease is readily spread by means not controlled by quarantine.

The serum treatment has proven very beneficial where it has been applied properly and great saving has resulted. Bad results have been reported but in most cases it has been where the simultaneous method of treatment has been employed. The output of serum by this department has been necessarily very limited for the reason that the appropriation made for this purpose by the legislature was not enough to employ necessary help for the biennial period for which it was intended to cover and the price of the serum manufactured under this provision was made twenty cents per ounce, which is about one-half the cost of manufacture. The proper procedure to follow tending to the eradication of cholera would be the establishment of proper laboratories with sufficient funds to carry on the manufacture of serum at a moderate price or provide for the sale of such serum to perpetuate its manufacture, this together with provisions for competent veterinarians to control the disease in the field and some restriction on the various proprietary serums would yield very satisfactory results.

The second outbreak of dourine in the state was reported to this department in May, 1911. This outbreak involved a number of stallions and mares in Taylor and Ringgold counties and bade fair to cause considerable trouble as the department has no means of purchasing and destroying diseased animals. The U. S. Bureau of Animal Industry however answered our call for aid with their usual prompt and unqualified support.

EIGHTH BIENNIAL REPORT.

During this biennial period, beginning April 26, 1911, and ending June 30, 1912, this department has received three hundred and thirty-nine official calls. Of these, seventy-two were calls to investigate glanders; ninety-four to investigate tuberculosis; fifteen to investigate scabies; fourteen to investigate rabies; three to investigate cerebro-spinal meningitis; nine to investigate hog cholera, and eighty-two to investigate dourine, besides fifty miscellaneous calls.

GLANDERS.

During this period, in answer to official calls to investigate glanders, the Department has visited thirty-six counties in the state, and in most instances the disease has been found to exist as a result of the importation of horses from other states. In one instance a carload of horses was shipped and all but two of the animals in the shipment were found to be affected with glanders. This carload was sold and distributed on Iowa farms before this Department received the call to investigate, and the infected horses thus distributed were accountable for the loss of a number of native horses. This is a sample of what we learned was happening in various parts of the state and on account of these results the Animal Health Commission formulated their ruling requiring that all horses shipped into the state from states west of the Mississippi river must be accompanied by health certificate and record of mallein test. Since this ruling went into effect on August 23, 1911, the testing of such shipments before being released at point of destination has revealed the existence of glanders in a number of importations.

The rule provides that any shipment of horses from states west of the Mississippi river not accompanied by health certificate and record of mallein test, enters the state in quarantine and shall remain in quarantine until released by this Department. The strict application of this rule will prevent the recurrence of such outbreaks, as the one referred to, and will save our Iowa farmers a large percentage of the losses heretofore sustained on account of outbreaks of glanders resulting from the importation of diseased horses. During this period, the Department encountered quite a serious outbreak in the vicinity of Eldora, Iowa, which was definitely traced to one western horse that escaped from a shipment reaching Iowa Falls from Wyoming four years ago.

Most of the outbreaks of glanders located during this period are the result of importations from South Dakota, and these importations in most instances were unbroken horses.

The writer is of the opinion a ruling should be made prohibiting the importation of unbroken horses for the reason that this class of horses cannot be satisfactorily examined or tested. At this writing we believe the horses of this state are again practically free from glanders, and as the state is now safeguarded by the test requirement in Rule 19 by the Animal Health Commission, we hope to keep our horses free from this disease.

CANADIAN TRIP.

Investigation of killing of nineteen horses shipped from Carpenter, Iowa, to Weyburn, Saskatchewan, Canada.

On March 10th, I received the following night lettergram:

Weyburn, Sask., March 9, 1912.

State Veterinarian:
Des Moines, Iowa.

Purchased fifty-seven horses from farmers in northern Iowa, mallein test applied before shipping by Assistant State Veterinarian McLeod, bill of health signed by Dr. Scott, condemned here for glanders by reacting mallein test; nineteen shot, others will be retested on March 14th; have proof from local veterinarians no clinical symptoms, have blood and heads of horses shot; could you send expert here by Thursday morning to protect horse industry in your state. All horses from three to seven years, sound; think test is unfair; who is best man to whom to ship heads for analysis so report could be used in evidence if necessary; answer quick at my expense.

(Signed) GEORGE BEISCHEL.

On receipt of the above lettergram I immediately wired Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, Washington, D. C., as follows:

Received the following today from Weyburn, Sask. (quoted the above lettergram); could you sent Moeller to investigate and witness test Thursday? Answer.

While waiting for an answer from Dr. Melvin, I wired George Beischel, Weyburn, Sask., "Hope to witness test Thursday, keep blood, lungs, liver and heads of all horses killed. Will also ask Washington, D. C., to investigate."

On March 11th, I received the following telegram from Dr. Melvin:

Dr. J. I. Gibson, State Veterinarian,
Des Moines, Iowa.

Moeller unavailable, instruct Beischel send blood nineteen horses here for serum tests, heads unnecessary; should additional horses react Thursday return them to United States in quarantine, collect blood each animal, ship here for diagnosis.

(Signed) MELVIN.

On March 11th, after consulting Gov. B. F. Carroll, I started for Weyburn, Sask., taking with me Dr. C. H. Stange, Dean of the Veterinary Department at Ames. On arrival at Weyburn, March 13th, we discovered that the carcasses of the nineteen horses that had been condemned by the veterinarian in the employ of the Canadian Government, and killed by the mounted police, were still in a good state of preservation covered with waste at the nuisance ground at the edge of town. We telephoned the veterinarian in charge of sanitary work in the Province of Regina asking permission to hold a post mortem, which favor he could not grant us without consulting the Veterinary Director General at Ottawa. After some delay Dr. Rutherford granted us permission to make the post mortem, providing certain of his sanitary force were present to witness same.

At the end of the second day all was ready for the post mortem, which we proceeded to make. We posted six of the animals finding no evidence whatever of the existence of glanders. Canadian authorities conceding it was unnecessary to follow the post mortem further, it was abandoned with the statement on our part that we found no evidence of glanders, and nothing in the history of the horses to warrant their destruction.

The original Beischel shipment numbered fifty-seven head. The remaining thirty-eight were held in quarantine for retest; this being the third test it was not applied until thirty days after the retest that was made by the Canadian authorities. On this second retest, nineteen that had shown suspicious records in the previous test, passed an ideal test and were released, as were all others excepting five. These were finally retested and released, so there were no more animals killed after our visit there.

The whole history of the shipment of horses, beginning with the fact that they were purchased on farms around the town of Carpenter, Mitchell county, Iowa, and before being shipped were subjected to the mallein test at the hands of Dr. J. H. McLeod, Charles City, Iowa, who is registered with the Bureau of Animal Industry, and given authority to make tests on shipments to Canada, to the final release of the last horse from quarantine, shows that the killing of the nineteen horses was entirely unwarranted, as their test in Iowa by Dr. McLeod showed no suspicion whatever of the existence of glanders in any animal in the shipment, and their final history until all were released, also showed no animal presenting any clinical symptoms of glanders.

It is the belief of Dr. Stange and the writer that there never was any infection of glanders in this shipment of fine young Iowa horses.

Mr. Beischel who suffered this great loss, and the loss from quarantine of his horses and premises, which put him out of the horse business for the year, has filed a claim for loss and damage before the Canadian Government with, we believe, good prospects of recovering. Mr. Bieschel and the people of Saskatchewan generally felt very grateful to the Governor of Iowa, and this Department for the investigation made, and shipments from this state to Canada since that time have been received with less question, and emigrants from this state have received better treatment and have been subjected to less delay at the port of entry than prior to our visit there.

DOURINE.

On May 15, 1911, we received a letter from Dr. Wm. Readhead of Lenox, Iowa, stating that some disease apparently contagious or infectious affecting stallions and mares existed in Platte township, Taylor county, and that the township trustees desired an investigation by this Department. We at once communicated with Dr. A. H. Quin, Assistant State Veterinarian, Creston, Iowa, requesting him to proceed to Lenox and consult with Dr. Readhead and examine the stock in question.

On May 19th, we received a report from Dr. Quin to the effect that he believed the disease in question to be dourine. We at once communicated with Dr. S. H. Bauman of Birmingham, Iowa, who had charge of the quarantine work in a previous outbreak of dourine in Van Buren county requesting him to go at once to Creston, and in company with Dr. Quin to examine the animals in question with a view to confirming the diagnosis. Dr. Bauman did so and after careful examination of several animals agreed with the diagnosis of Dr. Quin, and on May 24th Drs. Quin and Bauman reported in person at this office.

We then took steps to enlist the aid of the Bureau of Animal Industry at Washington, D. C. They responded promptly and have continued with us in the work up to the writing of this report.

A number of stallions and mares have been destroyed. The following letter from Dr. A. D. Melvin, Chief of the Bureau of

Animal Industry, Washington, D. C., under date of September 25th gives an accurate description of the method of procedure in connection with the work:

September 25, 1912.

Dr. J. I. Gibson, State Veterinarian,
Des Moines, Iowa.

Sir—The bureau was first advised of the presence of this outbreak of dourine in Iowa through your letter of May 24, 1911, stating that the affection had been diagnosed by Dr. Quin of Creston, Iowa, and his diagnosis confirmed by Dr. Bauman of Birmingham, Iowa, and requesting assistance in eradicating the same.

In accordance with such request Dr. Enos L. Day, veterinary inspector of the Bureau at Chicago, was directed to proceed to Creston and investigate and make a complete report of conditions.

Under date of June 1st, Dr. Day reported that as a result of the examination of a number of animals at Clearfield, Sharpsburg, Gravity and Denison, Iowa, he considered the symptoms very strongly indicative of dourine, and that you had placed all suspicious animals under State quarantine. With a view to confirming Dr. Day's diagnosis, Dr. E. T. Davison, veterinary inspector, Athenia, N. J., was directed on June 3, 1911, to proceed to Creston for a conference with yourself and Drs. Quin and Bauman.

Dr. Davison's preliminary report was made on June 13th. His diagnosis of dourine was confirmed on the part of the Bureau at a conference at which the Chief of the Bureau and the Chief of the Pathological Division were present, and it was then decided to purchase some of the affected animals and ship them to Washington for experimental purposes.

Dr. A. W. Miller, who had been placed in charge of the Bureau work of eradicating the disease, was accordingly directed to purchase four of these animals and forward them to the Bureau Experiment Station at Bethesda, Md.

One of the animals died enroute, but as a result of examinations of the others which arrived at the above station, the Bureau pathologist was successful in determining the presence of trypanosomes in serum obtained from one of the mares, thus establishing the identity of the disease beyond question.

In the meantime Dr. Miller had been directed to arrange with the various owners for the slaughter of infected animals, paying for the same upon an equitable basis, it being considered essential in order to successfully combat and stamp out such a disease that every possible source of infection be absolutely eliminated.

In accordance with such plan some thirteen stallions and mares have been destroyed within the state and post-mortem examinations made, tending in all cases to confirm the diagnosis. The bureau records indicate that some one hundred exposed animals showing no evidence of the disease are at present being held under State quarantine in Iowa. It is probable that arrangements will be made in the near future to detail Dr. Miller to act in co-operation with your office in securing blood serum from all such animals for the purpose of subjecting the same to the complement fixation test.

I am enclosing herewith a tabulated outline indicating the apparent origin and spread of the outbreak in Iowa.

Very respectfully,
(Signed) A. D. MELVIN,
Chief of Bureau.

- Radius (Gordon & Richards, McKeen, etc.)
  - B. M. Lady (Bacon)
    - Gay Lad (Philpot) 1910
    - Sultan (Philpot)
      - Br. mare—died (Winslow)
      - G. mare (Patton)
        - Trotteur (Waters)
          - Aged B. mare (Payne)
          - Two mares (Waters)
          - Mare Pet (Cowells)
            - Stal. **Mack** (Philpot)
          - Mare Babe (Cowells)
            - Stal. **Hydalgo** (Paige)
          - About 25 other mares
      - Mare Belle (Russell)
        - Gay Lad—died (Philpot) 1910.
      - Dun mare Topsy (F. M. Brown)
        - Black Rock (Russell)
      - G. mare (Patton)
        - Nicholas (Patton)
          - Denison mare (Howarth)
      - B. mare Pet (Krohmer)
        - Orphan Boy (Philpot)
          - Br. mare Nell (Hunter)
      - B. mare—died (Key)
      - Br. mare Nell (Hunter)
        - Stallion Spot (Anderson)
        - Gray Jack, Tack (Anderson)
      - Perch. mare Belle (E. Brown)
        - Turbulent (?) (Philpot)
      - Mare (Beedle)
        - Bedford (Philpot)

TUBERCULOSIS.

The subject of tuberculosis as it affects the cattle and swine industry of the state is an all important question and whilst no attempt has been made at an organized campaign against tuberculosis, yet this department has tested a great many cattle and we are pleased to say that the percentage of tuberculosis found in bovine herds at present is no higher than a decade ago, in some instances a marked improvement has been made. The repeated testing of the state herds together with the remodeling of the barns at the state institutions and the judicious use of disinfectants at various periods has not only reduced the percentage of tuberculosis to the merest minimum in some herds but has fully demonstrated in others that herds quite seriously affected with tuberculosis may be cleaned and kept clean as regards this disease.

Apart from the testing of state herds it has been the policy of this department, upon receiving notice from an inspector in charge at any abattoir where Iowa hogs and cattle have been slaughtered, to go to the premises from whence the cattle or hogs were shipped to investigate the conditions there. When we find infection in a bovine herd we have invariably applied the tuberculin test. In this way we are trying to trace the disease to its source.

Tuberculosis whilst not apparently on the increase in the bovine herds seems to be increasing rapidly in swine. The following letter from Dr. A. D. Melvin, Chief of the Bureau of Animal Industry, Washington, D. C., gives the government figures concerning the number of hogs found tubercular on slaughter at the abattoirs within the state:

Washington, D. C., Nov. 27, 1912.

Dr. J. I. Gibson, State Veterinary Surgeon,
Des Moines, Iowa.

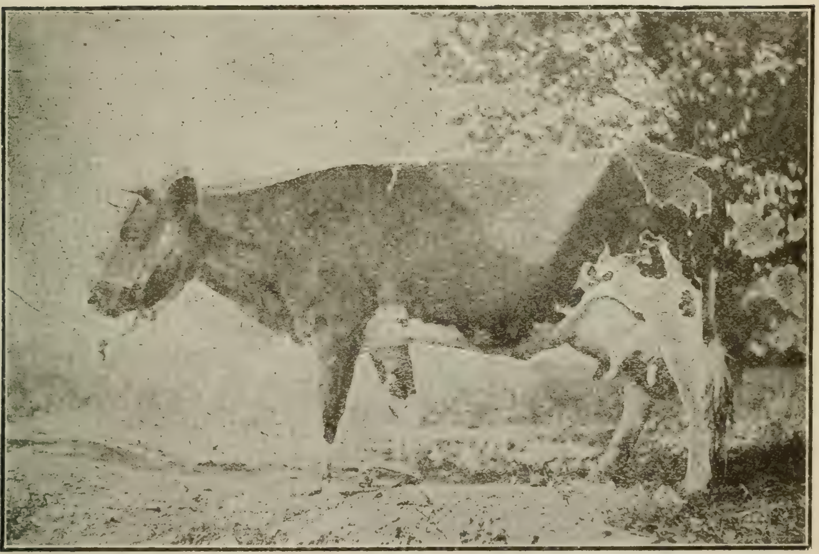
Sir—Replying to your letter of the 11th inst., our reports show that out of 2,555,576 hogs inspected at 12 stations in Iowa during the fiscal year 1912 the number of cases of tuberculosis found was 167,677. Some of these hogs no doubt came from adjacent states, but I believe that most of them were purchased in Iowa. Undoubtedly most of these cases were developed in the hogs through infected cattle by feeding infected dairy products, following infected cattle in feed lots, and feeding dead and infected cattle to hogs.

Very respectfully,

(Signed) A. D. MELVIN,
Chief of Bureau.

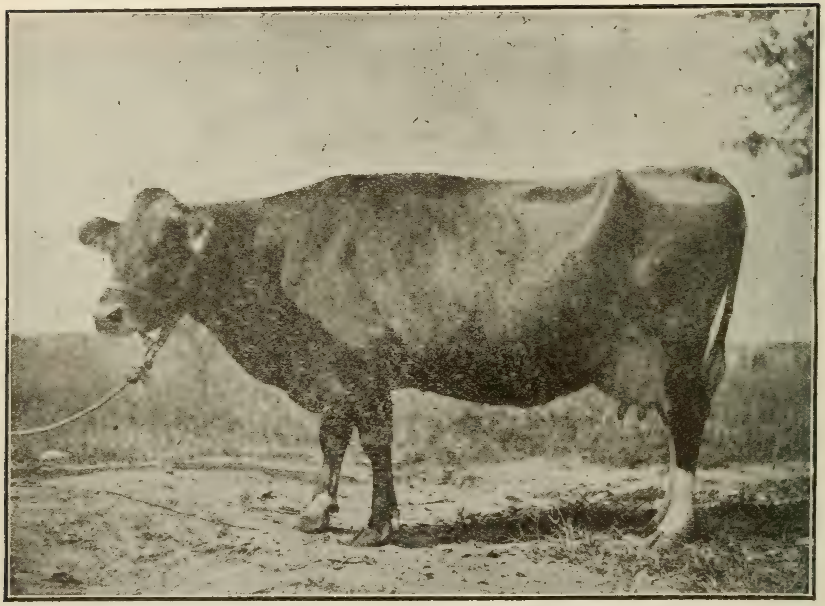
Having talked with a great many breeders and shippers of swine they have invariably expressed their opinion that more than half of our marketable hogs were slaughtered at abattoirs outside of the state. The figures contained in the above letter show 6½% of the hogs slaughtered affected more or less with tuberculosis. This 6½% at an average weight of 250 lbs. figured at 7c per lb., shows that we marketed in Iowa $2,934,347.50 worth of pork infected with tuberculosis. It is safe to double these figures and to estimate that we produced and sent to market not less than $6,000,000 worth of pork infected with tuberculosis. It is readily explained by the fact that most hogs receive their tubercular infection from following after the cattle. This is true not only of the ordinary herd of breeding cattle but it is also true of the steers in the feed yard. We believe the time is not far distant when every breeder and feeder will realize the importance and necessity of testing not only his breeding cattle but his steers in the feed yard as well before allowing any hogs to run after them.

Without prolonging the discussion on this subject further we present herewith a number of cuts which we obtained from the Cattle Commissioner of the state of Vermont and which were originally prepared by the Department of Agriculture at Washington, D. C.



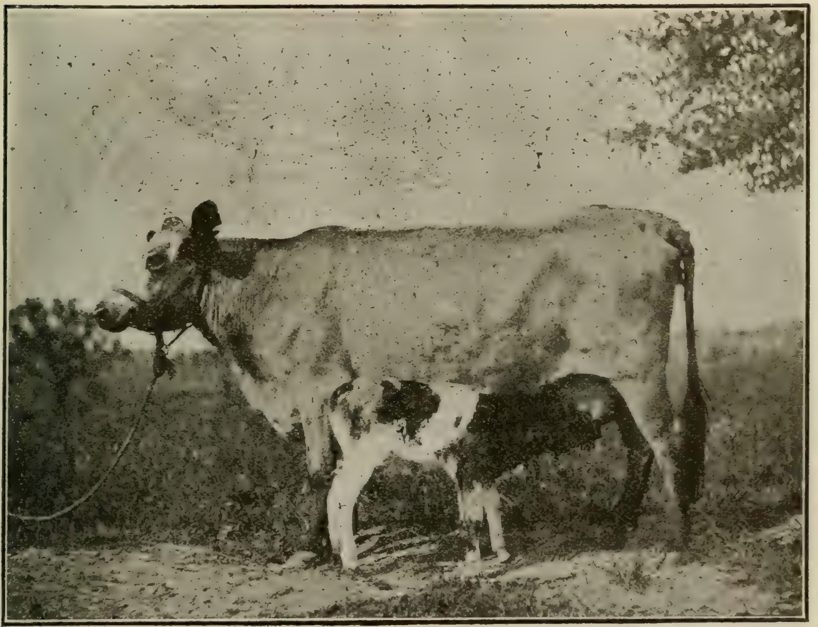
No. 1.—The cow shown in the above picture is apparently healthy. She does not cough, her appetite is good, she seems strong and vigorous and gives an unusually large quantity of milk. At the time her picture was taken it was known that she had been tuberculous at least four years and that she had been passing large numbers of tuberculosis germs from her body at least three years.

Since it first became known that the cow is diseased she has given birth to four calves.



No. 2.—The cow shown in the above picture is apparently healthy. She does not cough, her appetite is good, she gives a large quantity of milk and is in excellent general condition for a dairy cow. At the time her picture was taken it was known that she had been affected with tuberculosis at least four years and that she had been passing tuberculosis germs from her body at least three years.

The mixed dung of this cow and of the cow shown in the next picture caused tuberculosis in hogs that were permitted to eat it.

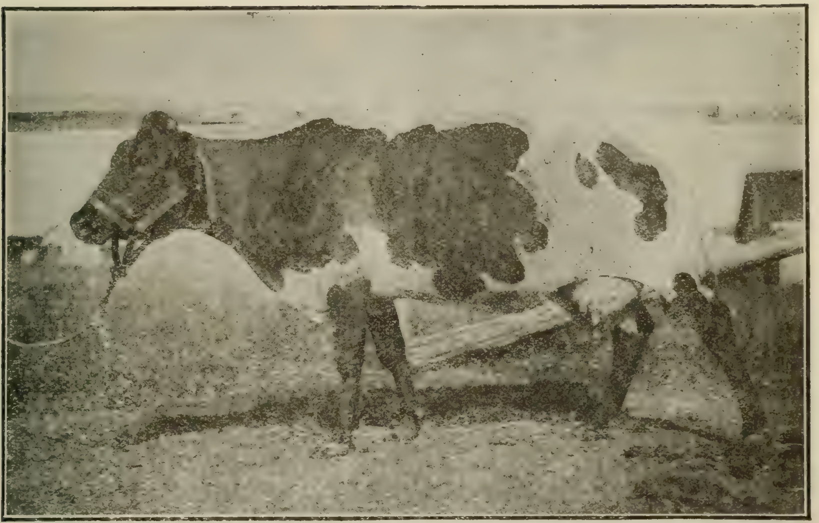


No. 3.—The cow shown in this picture is apparently healthy. She does not cough, her appetite is good and her general condition is excellent for a milk cow that has recently calved. At the time her picture was taken it was known that she had been affected with tuberculosis at least 4½ years and that she had been passing tuberculosis germs from her body for a long time. The calf by her side is the fourth she has produced in the last four years. Small quantities of her dung caused tuberculosis in guinea pigs when it was placed under their skin.

The mixed dung of this cow and of the one shown in the last picture caused tuberculosis in hogs that were permitted to eat it.

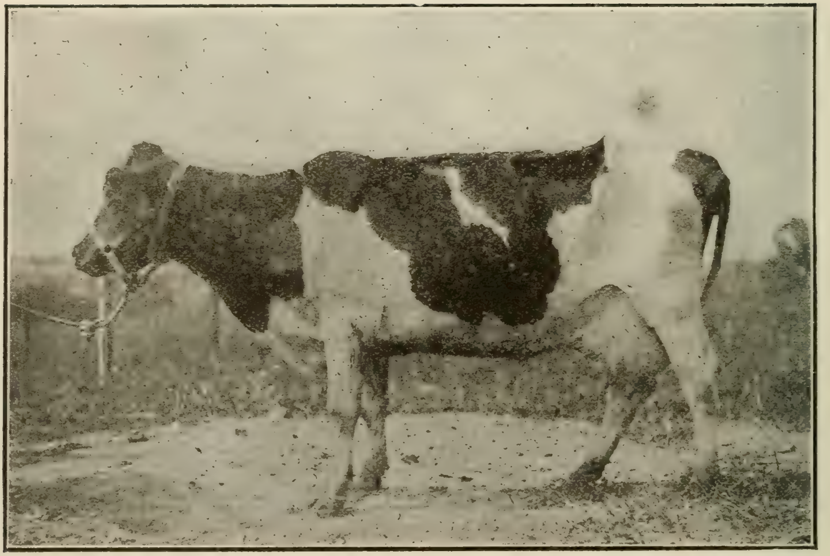
No. 4.—The cow shown in this picture is in excellent condition for an animal that has been affected with tuberculosis more than four years. Three years before her picture was taken tuberculosis germs were found in her dung and hogs that were permitted to eat her dung became tuberculous.

About 2½ years before her picture was taken it was found that the milk of the cow contained tuberculosis germs. There was nothing visible about her udder to show that it was diseased and it was only after two months of the most careful tests of her milk that an expert could tell from which of the four quarters the disease germs were being passed.



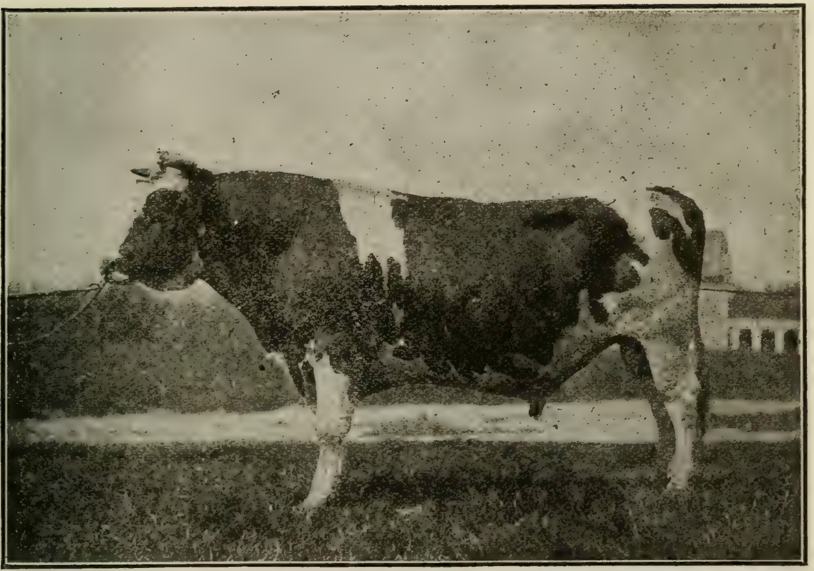
No. 5.—A long standing advanced case of tuberculosis, with large tuberculous swellings in the udder. A year before the above picture was taken the cow was discovered to have udder tuberculosis. This discovery was made by injecting some of her milk into guinea pigs; there was nothing in the appearance of external condition of the udder at first to show that it was diseased.

How very dangerous cows like the one in the picture are may be judged from the fact that calves that are permitted to drink milk from tuberculous udders only a single time are almost certain to have tuberculosis. A small amount of milk from cows like those in the above picture No. 4, mixed with the milk of other cows, will make the whole of it dangerous for both persons and lower animals.



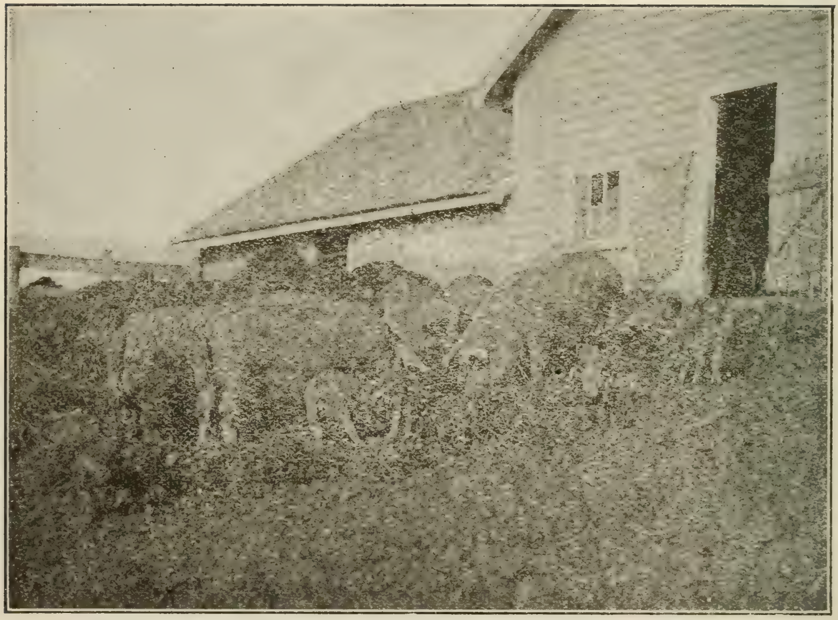
No. 6.—The cow in the picture is an advanced case of tuberculosis. She is very weak and thin, but a heavy milker and in her weak condition continues to give an abundant quantity of milk.

Cows of this kind are unfortunately too numerous in dairy herds. The temptation to keep such cows and to use their milk is greater than some persons can resist. Such cows are a great danger to other animals that may come in contact with them and the use of their milk in a raw state is very apt to cause tuberculosis alike in young persons and lower animals.



No. 7.—The picture of the bull was taken nearly four years after he was known to be tuberculous and three years after it was known that he was passing tuberculosis germs from his body.

Directly after his picture was taken he was killed. and in addition to numerous nodules of tuberculosis in his lungs it was found, when his body was opened, that nearly all the lymph glands connected with his bowels and liver were diseased. At the time of his death the bull weighed 1,850 lbs., and his apparent condition is excellent for an animal that was fed only rough forage and no grain in any form. The presence of tuberculosis in his body would never have been suspected before his death without the help of the tuberculin test.



A common source of tuberculosis among hogs.

RESULTS OF TESTS ON STATE HERDS.

	Number tested	Number reacted	Number suspicious	Number healthy
Eldora, October 11, 1911	46	4	0	42
Council Bluffs, October 3, 1911	18	0	0	18
Independence, October 11, 1911	80	3	0	77
*Independence, November 29, 1911	21	4	2	14
Knoxville, November 29, 1911	25	0	0	25
Mitchellville, October 19, 1911	28	0	0	28
Cherokee, October 18, 1911	107	0	0	107
Glenwood, October 25, 1911	91	1	0	90
Clarinda, October 27, 1911	104	2	0	102
Oakdale, retest, November 16, 1911	57	0	0	57
Davenport, November 17, 1911	49	8	4	37
Mount Pleasant, November 15, 1911	75	3	3	69

*New cattle.

HOG CHOLERA.

During this biennial period farmers of Iowa have suffered heavy losses as the result of wide spread outbreaks of cholera. Losses from this disease we expect will be reduced to the minimum in the near future when the state becomes thoroughly organized to combat, control and eradicate cholera. This we believe can be accomplished by the direct application of sanitary regulations and quarantine together with the use of anti-hog cholera serum.

The following article written by Dr. D. E. Baughman, Assistant State Veterinarian, Ft. Dodge, Iowa, will prove entertaining and instructive to all parties interested in the swine industry of Iowa.

THE METHOD OF USING ANTI-HOG CHOLERA SERUM.

In order to properly understand the method of using this serum, it would be well to first understand the method of making it. In order to make potent serum that has the power to protect a hog against cholera, it is necessary to have cholera pigs to draw the blood from. The younger the diseased pig that the blood is taken from and the more acute the strain, the more virulent the blood will be, and the more virulent the blood is that is used for hyper-immunizing, the more potent the serum will be.

It is impossible to make a potent and reliable serum where pigs are used to furnish virulent blood, with unknown form and virulency of disease, as is done with some of the serum firms, that depend entirely upon the supply of their diseased pigs from the markets or large packing plant, although this method has its advantage, in that this diseased blood can be had for a small sum, if they pay for them at all. These plants can make serum and sell it for much less than where it is made by the original method, as was intended by its inventors. But in order to make serum that is really potent and that will protect a hog from cholera, it is necessary that the strain of disease be bred up to the highest point of virulency.

This can be done much as corn is bred up. In breeding corn the farmer picks the best ears he can find for planting, he looks for a large ear, with the right color, straight rows, deep kernels, well filled at the end, and one that is well matured. So it is with the disease under the intentions of Dorset, McBride & Niles method. First you use pigs that you know are susceptible for you should know their source, then you use blood from the most virulent strain, for starting the disease, for instance when you kill six or eight a day, you use the blood for starting from the pig that has the disease in the most acute form, one that comes down in the shortest period of time, and the one that shows the best lesions. If they come down in seven or eight days all the better, but if they come down in thirteen or fourteen days the blood should not be used for hyper-immunizing. A pig from four to six months old will produce blood of a more virulent strain than one that is ten or twelve months old. The older pigs seem to acquire more or less natural immunity, therefore it is best to use younger pigs for this purpose.

This method was only discovered a few years ago by Doctors Dorset, McBride and Niles of the Bureau. At first it was looked upon with considerable suspicion even by the veterinary profession and a very few gave it much thought and study. Only in the last two or three years have the veterinarians realized its value and the importance of this branch of the veterinary practice. To have the best success in using serum it is absolutely necessary that a man take the temperature of all the hogs that one expects to vaccinate even when you do not suspect any infection in the herd.

I have known a number of cases where the veterinarian was called in and although the herd was not believed to be diseased, yet upon examination they have been found to have very high temperature. If these hogs had been vaccinated by the simultaneous method under these conditions the results would have been bad, as the farmers would have claimed that the infection was started by the vaccination. Where you take the temperature in these herds you will find that some of them have temperatures running from 104 to 106 degrees F. There is no doubt that in some of these cases where the simultaneous method was used in a supposed healthy herd, and where cholera followed, that the infection was in the herd at the time of vaccination. The precaution of taking the temperatures would have shown the herd was already infected and relieved the veterinarian of this embarrassing position and also maintained the reputation of the serum.

Where a herd is already infected temperatures should be taken as before stated. Each hog with a normal temperature should be marked with one mark, with a scissor across the back, but where the temperature is above 104 one should place two marks, these marks made with a scissor will last for three or four weeks, which will enable the farmer to keep track of those that were already diseased.

The temperature of a hog varies much and one should be guided by the condition under which the temperatures are taken. In warm weather the temperature may run up to 105 and yet the hog be in normal and healthy condition, and also if they are subjected to considerable exercise the temperature will rise to what would seem abnormally high, therefore the temperatures under these conditions should not be confounded with a diseased condition that you find in cholera. Whenever it is possible the hog should be confined in close quarters and the temperature taken standing. Where you catch each pig and lay them down to take the temperature it causes considerable excitement which with the exercise it would cause while catching them, would without a doubt raise the temperature. It is well to use a thermometer with a good size bulb when after being well vaselined it would be easily used without causing an irritation of the mucous membrane of the rectum.

One of the most important things to find out in vaccinating a diseased herd, is to be sure that the existing disease really is cholera. That can usually be done by holding post mortem, but in some cases one or two post mortems may not reveal cholera lesions. In this case you must guard yourself in giving your prognosis, for anti-hog cholera serum will not prevent any other disease than cholera. In simultaneous vaccination you usually get more or less reaction, pigs thus treated may be able to transmit the disease to susceptible or non-immune hogs, and in this way it may spread the infection or start new centers of infection. So it is a question as to whether it is advisable to use this method or not. In seasons when cholera is prevalent and especially if the disease has broken out in your immediate neighborhood, then the question of starting new infectious centers is not so important.

Cleanliness throughout the whole operation is very essential in administering serum to reduce the danger of septicema and abcess formation. Your syringe should be taken apart, your needles and vessels for using serum should be sterilized by being boiled in water. If you are using a syringe with a rubber plunger, the plunger should be disinfected with a five per cent solution of phenol or some disinfectant that will not deteriorate the rubber. The operator's hands should be well cleaned and kept clean throughout the entire operation. He should not attempt to catch any pigs or touch anything with his hands except the syringe. There should be plenty of assistants to do this part of the work. The operator should have plenty of clean warm water at hand. He should have two men to catch the hogs, one man to wash and disinfect the skin at the point of injection, and he should have two glass vessels with metallic covers to prevent the wind from blowing dust and dirt into them. The syringe best adapted for vaccination is a twenty or thirty c. c. with a glass barrel, and it should be tested with warm water before being used to see that it is in good working order, twenty c. c. of serum is about all that should be injected into one place, and I think it might be better to only inject ten c. c. in one place, by partly withdrawing the needle and inserting in another direction. This way you would not need to make but one puncture lessening the danger of infection. I would advise either one of two locations to inject the serum, one is the auxiliary space between the front legs, and the other on the inside of the thighs between the hind legs. I do not think it is necessary to inject deep into the muscles. Absorption takes place just as readily where it is injected under the skin into the subcutaneous tissue, and in this way you will not have so much lameness as where the injections are made deep into the muscles, by this method of injecting it leaves a bad spot in the ham, this the packers object to as the Government inspectors compel them to cut out these blemished spots which causes quite a waste to the expensive part of the meat.

It has been the custom of some veterinarians to vaccinate old hogs back of the ears by placing a rope noose or loop around the upper jaw, back of their tusks, then fastening the other end of the rope to some strong object. They will lay their entire weight back against the rope, but will not struggle much. This is also a very easy and safe way of handling pregnant sows. After having your hogs confined in this manner, they may be very easily vaccinated behind the ear in the loose skin. This location, however, should be more thoroughly washed and cleansed than where the injection is made under the belly, for at this point the skin seems to have more sebaceous glands than any other part of the body. The depression behind the ears makes it harder to get at and I find that you will have more abscesses by injection at this location than at any other point. I therefore only recommend this method in pregnant sows. I think where abortion follows it is more the cause of rough handling than the effects of the serum.

I think the time is at hand when every veterinarian should lend his aid to have a national law passed requiring every serum plant to be under inspection, compelling each plant to make serum under the government instructions, giving the inspectors power to collect serum at any time from stock on hand that is ready for the market. This should be welcomed by every legitimate serum concern that aims to sell only potent serum.

Misuse of serum as has been practiced by some veterinarians (if not corrected) will cause a reaction among the hog raisers that will discredit the serum whenever it is used. For instance, one man would vaccinate the sick one, as well as the well ones, and guarantee them all to live for one year; others would vaccinate those that they knew were sick for no other reason than to consume as much serum as possible, being paid by the cubic centimeter for their work. These veterinarians, I am so glad to say, are only a small minority, yet there is considerable carelessness among veterinarians in general, in regard to vaccinating every thing saying that they are paying for the serum, and it will be their loss if they die. In such a case a veterinarian may be excused for doing it, providing he is vaccinating in a neighborhood where the farmers understand its use. But I think where one is just beginning to vaccinate in a new and skeptical neighborhood, he had better not vaccinate anything that shows sickness or has a high temperature, for the sick ones will usually die and they will count this against the serum, which will materially cut down the percent of hogs saved, and the percent that they saved will be used as a basis to figure the profit they have obtained by vaccinating.

Don't vaccinate hogs that are sick or show high temperature.

Don't vaccinate with serum alone, then put sick ones with those vaccinated, unless you can confine them all in a space or pen, so that all will receive the infection at nearly the same time.

Don't pour more serum in your vessel than you will use, for pouring remaining remnants back into the bottle is liable to contaminate the serum and endanger its use.

Don't pour virulent blood away if you have any left after the simultaneous method. Any remaining blood should be destroyed by fire.

Don't use syringe, needles, or glass that has not been sterilized or disinfected.

Don't vaccinate infected herds, without marking those that show high temperatures. You had better take at least some temperatures in all herds.

Don't underestimate the weight of hogs in vaccinating. You are not liable to give too much serum, but you may give too small a dose.

Don't give your patrons too much encouragement when you are vaccinating infected herds.

Don't use the simultaneous method in an already infected herd.

INTERSTATE SHIPMENTS OF LIVE STOCK.

The Animal Health Commission at its first meeting in July, 1911, formulated rules 18 and 19 governing the importation of live stock into Iowa. Most states have similar importation requirements and are using a uniform health certificate approved by the United States Association of Live Stock Sanitary Boards. This certificate is made in triplicate, the original accompanies the shipment and is attached to the way bill, the duplicate is forwarded to the sanitary authorities of the state to which the shipment is billed, the copy is filed in the office of the sanitary authority of the state in which shipment originates. This method thoroughly carried out gives this office a record of all export and import shipments with details as to the number and kind of animals contained in each shipment.

We have gathered some statistics on this subject that will prove interesting. From January 1, 1912, to July 1, 1912, there was reported at this office 1,755 export shipments. Almost all of these are emigrants. Considering each shipment as representing an emigrant family of 5, during this six months' period mentioned we have sent out from Iowa 8,775 people. During the same period we have record of 1,044 import shipments, 233 of which were stock cattle, leaving 811 immigrant shipments representing a family of 5 persons we received into the state 4,055 people as against 8,775 people exported which leaves a balance of 4,720 against our population in a period of six months. Some might consider these statistics as evidence against the state of Iowa, but we feel more like congratulating ourselves as Iowans upon the fact that conditions are so good in this state that so many people can accumulate sufficient money and live stock to move to other states and buy larger tracts of cheaper land.

ANIMAL HEALTH COMMISSION.

The first Animal Health Commission was appointed by Governor B. F. Carroll. The following gentlemen constituting its membership: Frank Kinsley of McGregor, Iowa, representing the dairy interests; C. A. Saunders, Manilla, Iowa, representing the beef interests; Dr. G. W. Blanche, Belle Plaine, Iowa, and Dr. Tom Downing, Washington, Iowa, being the two veterinarians appointed. Under the Animal Health Commission act the State Veterinarian is made chairman and executive officer of the Commission.

The Commission met first in July, 1911, and formulated rules and regulations for the prevention and spread of diseases among domestic animals, which rules have been amended and appear in this report.

Rule 18 referring to the importation of live stock into the state of Iowa is serving as a safeguard against the importation of horses affected with glanders and cattle affected with tuberculosis, also hogs affected with cholera.

Since the adoption of the rules many instances have come to light where under the application of the rules the animals intended for shipment into Iowa have been found diseased and therefore the shipments prohibited. The application of Rule 19 to shipments arriving in the state without proper health certificate has also brought to light diseased animals that had already been shipped into the state and were destroyed after being tested in compliance with the rule. We believe the strict application of these rules will save the farmers of the state a large percentage of the loss heretofore sustained as the result of the importation of diseased live stock.

We produce herewith a copy of Chapter 115, laws of the Thirty-fourth General Assembly, which sets forth the duties and powers of Animal Health Commission and the Veterinary Examining Board connected therewith.

We believe a careful study of this law and the rules formulated by the Animal Health Commission will serve to commend this legislation to all who are interested in the success of our great live stock industry in Iowa.

Chapter 115.

COMMISSION OF ANIMAL HEALTH.

H. F. 329.

AN ACT to abolish the state board of veterinary medical examiners, to transfer the powers and duties of said board to the state veterinary surgeon, and to establish a commission of animal health. (Additional to chapter fourteen-A (14-A) of title twelve (XII) of the supplement to the code, 1907, relating to the practice of veterinary medicine, surgery and dentistry.)

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. State board of veterinary medical examiners abolished—powers and duties transferred. That the board known as the state board of veterinary medical examiners is hereby abolished, and all of the powers and duties thereof are hereby transferred to and enjoined upon the state veterinary surgeon, except as hereinafter provided. All of the books, documents, records, stationery and office equipment now in possession of the board or of any officer or employe thereof shall, upon the taking effect of this act, be turned over to the state veterinary surgeon.

Sec. 2. Commission of animal health—how constituted and appointed—terms. There is hereby created a commission to be known as a commission of animal health, which commission shall consist of the state veterinary surgeon, who shall be the chairman and executive officer thereof, two veterinarians and two stock raisers, all of whom shall be appointed by the governor. The veterinarians shall possess the same qualifications required for the state veterinary surgeon. One such veterinarian shall be appointed to serve until June 30, 1912, and one until June 30, 1913, and as their terms expire their successors shall be appointed for three years. The state veterinary surgeon shall be appointed to serve until June 30, 1914, and thereafter his term shall be three years. The other members of the commission shall be appointed one to serve until June 30, 1912, and the other until June 30, 1913, and as their terms expire their successors shall be appointed for a term of two years.

Sec. 3. Meetings—rules and regulations for prevention and spread of disease among animals. The commission shall hold at least two meetings each year, one in July and one in January, at the office of the state veterinary surgeon, and may meet at such other times and places, in the state, as may seem necessary. It shall have the power and authority to make such rules and regulations as it shall deem necessary for the prevention, suppression, or against the spread of any contagious or infectious disease among animals in or being driven or transported through or brought into the state, and may provide for quarantining against animals thus diseased or that have been exposed to others so diseased, whether within or without the state. When such rules and regulations have been submitted to and approved by the executive council they shall be published and enforced by the veterinary surgeon and in the performance of his duties he may call to his assistance any peace officer.

Sec. 4. Examining Board. The state veterinary surgeon and the two veterinarians upon the commission shall constitute a board for the examination of applicants to practice veterinary medicine, surgery and dentistry in the state.

ANIMALS REJECTED AT SLAUGHTER HOUSES.

Rule 16. So-called "piggy" or pregnant sows, boars and rejected cattle found in railway and packing house stock yards must not be sold nor delivered to farmers, but held subject to such quarantine as may be deemed necessary to prevent the communication of any contagious, infectious or communicable disease.

Rule 17. The flesh of pregnant animals shall neither be sold nor used for human food after the seventh month of pregnancy for cows and the tenth week for sows.

IMPORTATION OF LIVE STOCK.

Rule 18. The importation of live stock into the state of Iowa is hereby prohibited, except under the following conditions.

Section 1. All horses, mules and asses, over twelve months of age imported into the state of Iowa must be accompanied by a certificate of health, including a record of the mallein test, certifying that the animals described thereon have been inspected and mallein tested and found free from all contagious or infectious diseases. Such test and inspection to be made not more than thirty days prior to date of importation.

Sec. 2. All dairy and breeding cattle over six months of age imported into the state of Iowa must be accompanied by a certificate of health including a record of the tuberculin test, certifying that the animals described thereon have been inspected and tuberculin tested and found free from all contagious or infectious diseases. Such test and inspection to be made not more than thirty days prior to date of importation.

Sec. 3. All cattle other than those mentioned in Sec. 2, except steers and cattle for immediate slaughter, shall be accompanied by a certificate of health and an affidavit, certifying that the title of such cattle will not be transferred and that they will not be used for other purposes than feeding or slaughter without first notifying the State Veterinarian and having them subjected to the tuberculin test.

Sec. 4. All sheep and goats imported into the state of Iowa, except for immediate slaughter, must be accompanied by a certificate of health, certifying that they have been inspected and found free from all contagious, infectious or transmissable diseases.

Sec. 5. All swine imported into the state of Iowa, except for immediate slaughter, must be accompanied by a certificate of health, certifying that they have been immunized with Dorset-McBride-Niles anti-hog cholera serum not more than thirty days prior to date of importation when the serum alone is used and not less than thirty days prior to date of importation when the simultaneous method is used.

Sec. 6. Certificates and tests as herein required must be issued by a Federal, State or Assistant State Veterinarian or in lieu thereof the certificate may be made by a graduate veterinarian, if such certificate bear the approval of the State Veterinarian or authority having charge of diseases of domestic animals in the state where the shipment originates.

Sec. 7. Certificates shall be made in triplicate, the original certificate to be attached to the waybill for the shipment, the duplicate to be sent to the State Veterinarian at Des Moines, Iowa, and the triplicate to be forwarded to the State Veterinarian or live stock authority of the state from which the stock is being shipped.

Rule 19. Detention and Inspection—quarantine. In lieu of an inspection certificate as required by Rule 18, live stock may be detained at a suitable stock yards or other enclosure within the state nearest the State Line, on the railroad or highway over which they are being shipped, driven or hauled and there examined at the expense of the owner, or may be shipped or driven to their destination under quarantine at the discretion of the owner, there to remain in quarantine until inspected and tuberculin or mallein tested at the expense of the owner, and released by the State Veterinary Surgeon. Such expense shall be a lien upon the live stock. Railroad or transportation companies are required to notify the State Veterinary Surgeon at Des Moines, Iowa, of any shipments of live stock entering the State of Iowa not being accompanied by certificates of health as required by Rule 18.

Rule 20. Township trustees and local health officers of towns, villages and cities are hereby authorized and instructed to seize and hold in quarantine all live stock in violation of above rules and to notify the State Veterinary Surgeon at Des Moines, Iowa. The expense of the quarantine and examination must be paid by the owner (or agent) of the quarantined animals as prescribed by law.

STOCK EXHIBITED AT FAIRS.

Rule 21. Rules 18 and 19 shall not be held to apply to live stock brought into the state from other states for the purpose of exhibition or racing at State, District or County Fairs; provided, that in the event that sales shall be made from such exhibition herds, to remain in the state of Iowa, such stock so sold shall first be submitted to inspection requirements set forth in Rule 18 before the sale is consummated and the stock shipped to destination.

Rule 22. It shall be the duty of the State Veterinary Surgeon to supervise the disinfection of all buildings, stalls and pens at the State Fair Grounds just prior to the opening of the State Fair and to disinfect hog pens and such other enclosures as he may deem necessary daily during the Fair.

Rule 23. All animals presented for exhibition at the Iowa State Fair and Sioux City Fair shall be subjected to examination by the State Veterinary Surgeon before entering the Fair Grounds, and to daily inspection during the Exhibition. Should any animal be found to be affected with any contagious, infectious or communicable disease it shall immediately be removed to a place of quarantine. The show pens or stalls in which such diseased animal or animals were kept must immediately be cleaned and disinfected under the supervision of the State Veterinary Surgeon.

Rule 24. The term "quarantine" shall be construed to mean the perfect isolation of all diseased or suspected animals from contact with healthy animals, as well as the exclusion of all healthy animals from yards, stables, enclosures or grounds where suspected or diseased animals are or have been kept.

Rule 25. The State Veterinary Surgeon is hereby authorized and directed to co-operate with the United States Bureau of Animal Industry and may formulate and print instructions or rules pertaining to the prevention and spread of contagious diseases among domestic animals by order of the Animal Health Commission.

Rule 26. All hogs within the state of Iowa immunized by the double or simultaneous method of treatment against hog cholera shall be held in strict quarantine for a period of not less than thirty days.

Rule 27. All swine exhibited at State, County or other Fairs or exhibitions in the State of Iowa must be accompanied by a certificate showing that they have been immunized with Dorset-McBride-Niles anti-hog cholera serum not more than thirty days prior to date of such Fair or exhibition when serum alone is used and not less than thirty days prior to date of such Fair or exhibition when the simultaneous method is used.

Approved under the requirement of Section 3 of Chapter 115, Acts of the Thirty-fourth General Assembly. August 29th, 1911.

ANIMALS REJECTED AT SLAUGHTER HOUSES.

Rule 16. So-called "piggy" or pregnant sows, boars and rejected cattle found in railway and packing house stock yards must not be sold nor delivered to farmers, but held subject to such quarantine as may be deemed necessary to prevent the communication of any contagious, infectious or communicable disease.

Rule 17. The flesh of pregnant animals shall neither be sold nor used for human food after the seventh month of pregnancy for cows and the tenth week for sows.

IMPORTATION OF LIVE STOCK.

Rule 18. The importation of live stock into the state of Iowa is hereby prohibited, except under the following conditions.

Section 1. All horses, mules and asses, over twelve months of age imported into the state of Iowa must be accompanied by a certificate of health, including a record of the mallein test, certifying that the animals described thereon have been inspected and mallein tested and found free from all contagious or infectious diseases. Such test and inspection to be made not more than thirty days prior to date of importation.

Sec. 2. All dairy and breeding cattle over six months of age imported into the state of Iowa must be accompanied by a certificate of health including a record of the tuberculin test, certifying that the animals described thereon have been inspected and tuberculin tested and found free from all contagious or infectious diseases. Such test and inspection to be made not more than thirty days prior to date of importation.

Sec. 3. All cattle other than those mentioned in Sec. 2, except steers and cattle for immediate slaughter, shall be accompanied by a certificate of health and an affidavit, certifying that the title of such cattle will not be transferred and that they will not be used for other purposes than feeding or slaughter without first notifying the State Veterinarian and having them subjected to the tuberculin test.

Sec. 4. All sheep and goats imported into the state of Iowa, except for immediate slaughter, must be accompanied by a certificate of health, certifying that they have been inspected and found free from all contagious, infectious or transmissable diseases.

Sec. 5. All swine imported into the state of Iowa, except for immediate slaughter, must be accompanied by a certificate of health, certifying that they have been immunized with Dorset-McBride-Niles anti-hog cholera serum not more than thirty days prior to date of importation when the serum alone is used and not less than thirty days prior to date of importation when the simultaneous method is used.

Sec. 6. Certificates and tests as herein required must be issued by a Federal, State or Assistant State Veterinarian or in lieu thereof the certificate may be made by a graduate veterinarian, if such certificate bear the approval of the State Veterinarian or authority having charge of diseases of domestic animals in the state where the shipment originates.

Sec. 7. Certificates shall be made in triplicate, the original certificate to be attached to the waybill for the shipment, the duplicate to be sent to the State Veterinarian at Des Moines, Iowa, and the triplicate to be forwarded to the State Veterinarian or live stock authority of the state from which the stock is being shipped.

Rule 19. Detention and Inspection—quarantine. In lieu of an inspection certificate as required by Rule 18, live stock may be detained at a suitable stock yards or other enclosure within the state nearest the State Line, on the railroad or highway over which they are being shipped, driven or hauled and there examined at the expense of the owner, or may be shipped or driven to their destination under quarantine at the discretion of the owner, there to remain in quarantine until inspected and tuberculin or mallein tested at the expense of the owner, and released by the State Veterinary Surgeon. Such expense shall be a lien upon the live stock. Railroad or transportation companies are required to notify the State Veterinary Surgeon at Des Moines, Iowa, of any shipments of live stock entering the State of Iowa not being accompanied by certificates of health as required by Rule 18.

Rule 20. Township trustees and local health officers of towns, villages and cities are hereby authorized and instructed to seize and hold in quarantine all live stock in violation of above rules and to notify the State Veterinary Surgeon at Des Moines, Iowa. The expense of the quarantine and examination must be paid by the owner (or agent) of the quarantined animals as prescribed by law.

STOCK EXHIBITED AT FAIRS.

Rule 21. Rules 18 and 19 shall not be held to apply to live stock brought into the state from other states for the purpose of exhibition or racing at State, District or County Fairs; provided, that in the event that sales shall be made from such exhibition herds, to remain in the state of Iowa, such stock so sold shall first be submitted to inspection requirements set forth in Rule 18 before the sale is consummated and the stock shipped to destination.

Rule 22. It shall be the duty of the State Veterinary Surgeon to supervise the disinfection of all buildings, stalls and pens at the State Fair Grounds just prior to the opening of the State Fair and to disinfect hog pens and such other enclosures as he may deem necessary daily during the Fair.

Rule 23. All animals presented for exhibition at the Iowa State Fair and Sioux City Fair shall be subjected to examination by the State Veterinary Surgeon before entering the Fair Grounds, and to daily inspection during the Exhibition. Should any animal be found to be affected with any contagious, infectious or communicable disease it shall immediately be removed to a place of quarantine. The show pens or stalls in which such diseased animal or animals were kept must immediately be cleaned and disinfected under the supervision of the State Veterinary Surgeon.

Rule 24. The term "quarantine" shall be construed to mean the perfect isolation of all diseased or suspected animals from contact with healthy animals, as well as the exclusion of all healthy animals from yards, stables, enclosures or grounds where suspected or diseased animals are or have been kept.

Rule 25. The State Veterinary Surgeon is hereby authorized and directed to co-operate with the United States Bureau of Animal Industry and may formulate and print instructions or rules pertaining to the prevention and spread of contagious diseases among domestic animals by order of the Animal Health Commission.

Rule 26. All hogs within the state of Iowa immunized by the double or simultaneous method of treatment against hog cholera shall be held in strict quarantine for a period of not less than thirty days.

Rule 27. All swine exhibited at State, County or other Fairs or exhibitions in the State of Iowa must be accompanied by a certificate showing that they have been immunized with Dorset-McBride-Niles anti-hog cholera serum not more than thirty days prior to date of such Fair or exhibition when serum alone is used and not less than thirty days prior to date of such Fair or exhibition when the simultaneous method is used.

Approved under the requirement of Section 3 of Chapter 115, Acts of the Thirty-fourth General Assembly. August 29th, 1911.

VARIOUS STATE REQUIREMENTS FOR THE IMPORTATION OF LIVE STOCK.

ALABAMA.

Horses, Mules, and Asses.—Health certificate, in duplicate, issued by officially qualified veterinarian.

Cattle.—Health certificate, including tuberculin test for all cattle over 6 months old intended for purposes other than immediate slaughter. Calves from tubercular mothers or herd can not come into state.

Hogs.—Health certificate, showing no exposure to disease.

Sheep.—Health certificate.

Who May Inspect.—Any legally qualified veterinarian who may be indorsed or certified to by state veterinarian of state of origin, or by federal inspector.

Official.—Dr. C. A. Cary, state veterinarian, Auburn, Alabama.

ARIZONA.

Horses, Mules and Asses.—Health certificate, preferably including mallein test.

Cattle.—Health certificate. Tuberculin test for dairy or breeding cattle.

Hogs.—Health certificate and isolation at destination two weeks or until released by state veterinarian.

Sheep.—Health certificate for all. Certificate of dipping under official supervision when from any territory classed as infected by the government.

Who May Inspect.—Horses, cattle, and hogs: any state, federal, county veterinarian, or other veterinarian when his certificate is approved by the state veterinarian or state sanitary board at point of origin. Sheep: Federal veterinarian.

Official.—Dr. J. C. Norton, state veterinarian, Phoenix, Ariz., to whom duplicate certificate should be sent in advance.

ARKANSAS.

Horses, Mules and Asses.—Health certificate.

Cattle.—Health certificate for dairy or breeding cattle, including tuberculin test by official veterinarian, or permit from state veterinarian to test after arrival.

Hogs.—Must be free from and not exposed to contagious or infectious disease.

Sheep.—Must be free from and not exposed to contagious or infectious disease.

Who May Inspect.—Officials of the Bureau of Animal Industry or official veterinarians of state of origin.

Official.—Dr. J. F. Stanford, Fayetteville, Ark.

CALIFORNIA.

Horses, Mules, and Asses.—Health certificate, including mallein-test certificate. One copy of certificate and test record attached to way bill and duplicate copy mailed to state veterinarian on day of shipment.

Cattle.—Health certificate, including tuberculin-test certificate for breeding and dairy cattle. One copy of certificate and test record attached to way bill and duplicate copy mailed to state veterinarian of California on day of shipment. Special regulations for importation of southern cattle.

Hogs.—Health certificate.

Sheep.—In accordance with Federal regulations.

Who May Inspect.—Federal veterinarians or veterinarians certified to by the authorities charged with the control of live-stock sanitary work in the state in which the animals originate.

Official.—Dr. Charles Keane, state veterinarian, Sacramento, Cal.

COLORADO.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate and tuberculin-test chart for bulls for breeding purposes and female cattle over 6 months old intended for dairy purposes.

Hogs.—None.

Sheep.—None, except government regulations.

Who May Inspect.—Official veterinarians, state or federal, or a licensed veterinarian whose certificate is approved by the state veterinarian or like officer.

Official.—Dr. W. W. Yard, state veterinarian, Denver, Colo.

CONNECTICUT.

Horses, Mules, and Asses.—None.

Cattle.—For neat cattle over 6 months of age, health certificate, including tuberculin-test chart properly filled out and certified to by a qualified veterinarian in any other state who is approved by the authority having jurisdiction of diseases of domestic animals in that state. This certificate must contain a description of each animal, including age, breed, sex and color, or numbered ear tags so that animals may be easily identified. When certificate as above described is not provided, neat cattle may be taken into the state under a permit from the commissioner on domestic animals and held in quarantine at the place designated until examined and released by the commissioner or his agent.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Commissioner or his agent.

Official.—H. O. Averill, commissioner on domestic animals, Hartford, Conn.

DELAWARE.

Horses, Mules, and Asses.—None.

Cattle.—Cattle for dairy or breeding purposes admitted to the state on permit from the live stock sanitary board or must be accompanied by certificate, including tuberculin-test chart, showing animals to be free from tuberculosis.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Federal or state inspector, or veterinarian whose certificate must be approved by state live stock sanitary board.

Official.—Wesley Webb, corresponding secretary of state board of agriculture, Dover, Del.

FLORIDA.

Horses, Mules, and Asses.—None.

Cattle.—None.

Hogs.—None.

Sheep.—None.

The state law provides that it shall be unlawful for any person to bring into the state or to offer for sale any live stock suffering from contagious or infectious diseases.

Who May Inspect.—None needed.

Official.—Dr. Charles F. Dawson, veterinarian to state board of health, Jacksonville, Fla.

GEORGIA.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate and tuberculin test record for all dairy or breeding cattle. Cattle may upon affidavit of owner or exhibitor be shipped in for fairs or live stock exhibitions, but can not be sold for delivery within the state until they have been examined and tuberculin tested by state veterinarian or his duly authorized deputy.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Any qualified graduate veterinarian who is indorsed by the state veterinarian or officer in charge of live stock sanitary work in the state where the shipment originates; also veterinarians of the bureau of animal industry.

Official.—Dr. Peter B. Bahnsen, state veterinarian, Atlanta, Ga.

IDAHO.

Horses, Mules, and Asses.—None.

Cattle.—Dairy and breeding cattle to be tested with tuberculin, three preliminary temperatures and four after injection. Tuberculin-test chart should accompany cattle.

Hogs.—None.

Sheep.—Bucks to be dipped under state supervision.

Who May Inspect.—Federal, state and assistant state veterinarians to make tuberculin test.

Official.—Dr. V. C. White, state veterinarian, Boise, Idaho.

ILLINOIS.

Horses, Mules, and Asses.—None.

Cattle.—None, except Texas fever.

Hogs.—None.

Who May Inspect.—State veterinarian and his assistants.

Officials.—Dr. J. M. Wright, state veterinarian, 1827 Wabash Avenue, Chicago, Ill.; Mr. C. A. Lowery, secretary, state board of live stock commissioners, Springfield, Ill.

INDIANA.

Horses, Mules, and Asses.—None.

Cattle.—All cattle shipped into state must be tuberculin tested and tagged with Indiana state tags. Government test preferred. Test charts must be sent to state veterinarian. Cattle for feeding purposes required to be kept separate from all other classes of cattle and swine until slaughtered or shipped out of the state. Sworn affidavit required.

Hogs.—Hogs shipped into state for breeding purposes required to have certificates showing freedom from disease and that they originated in non-infected territory. All stock yards considered infected territory, unless under government supervision and non-infected pens are provided. Feeding hogs under same restrictions unless permit be secured from Indiana state veterinarian.

Sheep.—None.

Who May Inspect.—State veterinarian or veterinary inspector of the bureau of animal industry.

Official.—Dr. Nelson, state veterinarian, Indianapolis, Ind.

IOWA.

Horses, Mules, and Asses.—Health certificate, including mallein test.

Cattle for Dairy and Breeding Purposes.—Health certificate, including tuberculin test. Other cattle except for immediate slaughter affidavit required.

Hogs.—Health certificate showing immunization by the Dorset-McBride-Niles serum.

Sheep.—Health certificate.

Who May Inspect.—The above required certificates may be issued by a federal, state or assistant state veterinarian or by any graduate veterinarian whose certificate is indorsed by the parties having charge of live stock sanitation in the state where shipment originates.

Official.—Dr. J. I. Gibson, state veterinarian, Des Moines, Ia.

KANSAS.

Horses, Mules, and Asses.—Inspection certificate and mallein test issued by federal or state authorities, when shipped or driven from below the southern quarantine line, showing them to be free from Texas fever ticks.

Cattle.—Health certificate from territory under quarantine by the federal government on account of Texas fever, ticks or scabies, including tuberculin test certificate for dairy cattle and registered cattle for breeding purposes.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Inspectors of the bureau of animal industry, veterinarians and inspectors having a commission from the state live stock sanitary commissioner.

Official.—Sam S. Graybill, state live stock sanitary commissioner, Topeka, Kansas.

KENTUCKY.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate, including certificate of tuberculin test, except for cattle for immediate slaughter. Southern cattle admitted for purposes other than immediate slaughter during January, November and December, after certification by an inspector of the bureau of animal industry as being free from any symptoms of Texas fever.

Hogs.—None.

Sheep.—Sheep intended for purposes other than immediate slaughter shall be accompanied by certificate from an inspector of the bureau of animal industry showing them to have been dipped once within 10 days of date of entry in either lime and sulphur or a nicotine dip.

Who May Inspect.—State veterinarian and assistants, inspectors of the bureau of animal industry.

Officials.—Dr. Robert Graham, state veterinarian, Lexington, Ky.; Hon. M. C. Rankin, chairman state live stock sanitary board, Frankfort, Ky.

LOUISIANA.

Horses, Mules, and Asses.—Health certificate showing freedom from all contagious, infectious and communicable diseases.

Cattle.—Dairy and breeding cattle shall be free from tuberculosis; must be tested with tuberculin before entering state. Owner or agent of cattle must mail certificate to secretary and executive officer of state live stock sanitary board immediately following arrival of cattle under 6 months old; calves from tuberculous cows shall be rejected.

Hogs.—Health certificate from qualified veterinarian 24 hours before shipping, showing freedom from infectious, contagious or communicable disease.

Sheep.—Health certificate from qualified veterinarian 24 hours before shipping, showing freedom from infectious, contagious or communicable disease.

Who May Inspect.—All qualified veterinarians in the state deputized by board to make such inspections.

Official.—Dr. E. Pegram Flower, secretary and executive officer of state live stock sanitary board, Baton Rouge, La.

MAINE.

Horses, Mules, and Asses.—Health certificate and mallein test.

Cattle.—Must have permit from cattle commission, and be quarantined on owner's premises for 30 days and be subject to tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Qualified veterinarians authorized by live stock sanitary commissioner.

Official.—Mr. Van W. Carll, live stock sanitary commissioner, Augusta, Maine.

MARYLAND.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate for feeding cattle, and tuberculin test for dairy and breeding cattle, accompanied by test sheet.

Hogs.—Health Certificate.

Sheep.—Health Certificate.

Who May Inspect.—State veterinarian, deputies and inspectors of the bureau of animal industry.

Official.—Dr. Frank H. Mackie, chief veterinary inspector, 1035 Cathedral Street, Baltimore, Md.

MASSACHUSETTS.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate, including tuberculin test, except beeves for immediate slaughter and calves under 6 months old. Certificates of test made by veterinarians in other states are accepted if approved by the proper live stock sanitary authorities in those states.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Chief of cattle bureau or his agents.

Official.—Mr. Fred F. Walker, chief of cattle bureau, Boston, Mass.

MICHIGAN.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate for dairy cattle, including tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Competent veterinarian.

Officials.—Dr. Ward Giltner, state veterinarian, East Lansing, Mich.; Mr. H. H. Hinds, president state live stock sanitary commission, Stanton, Mich.

MINNESOTA.

Horses, Mules, and Asses.—All branded horses, mules or asses imported into Minnesota must be accompanied by a health certificate, including mallein test, certifying that animals have been examined and mallein tested within 30 days prior to date of shipment and found free from glanders.

Cattle.—All cattle intended for dairy or breeding purposes imported into Minnesota must be tuberculin tested. Dairy and breeding cattle imported into Minnesota from the state of Illinois must be held and tuberculin tested on arrival unless accompanied by a certificate of tuberculin test made and issued by a veterinarian of the United States bureau of animal industry.

Hogs.—Health Certificate.

Sheep.—Health Certificate.

Who May Inspect.—State veterinarians or assistants, other than those of Illinois, federal veterinarians and veterinarians acting under authority of state live stock sanitary board.

Official.—Dr. S. H. Ward, secretary and executive officer, live stock sanitary board, Old Capitol, St. Paul, Minn.

MISSISSIPPI.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Health certificate. Tuberculin test for dairy and breeding cattle.

Hogs.—Health Certificate.

Sheep.—Health Certificate.

Who May Inspect.—State veterinarian, assistant state veterinarians, inspectors of the bureau of animal industry.

Official.—Mr. W. L. Hutchinson, secretary, live stock sanitary board, Agricultural College, Mississippi.

MISSOURI.

Horses, Mules, and Asses.—None specifically required. The statutes of the state forbid the importation of animals affected with glanders, farcy or nasal gleet.

Cattle.—Health certificate for dairy and breeding cattle, including tuberculin test. If any animal in a lot inspected is found tuberculous, the words, "exposed to tuberculosis on day of inspection," shall be written on the certificate of health of such animals as pass. Cattle for pasturing, feeding or immediate slaughter admitted on permit from state veterinarian without tuberculin test. Regulations do not apply to cattle shipped to the public stock yards at Kansas City, St. Joseph and St. Louis, nor for exhibition at any fair or live stock show.

Hogs.—None.

Sheep.—None specifically required. The statutes of the state forbid the importation of sheep affected with any contagious disease.

Who May Inspect.—Official veterinarian, state or federal, or competent veterinarian whose certificate shall be approved by the state veterinarian or like officer in writing.

Official.—Dr. S. Sheldon, state veterinarian, Columbia, Mo.

MONTANA.

Horses, Mules, and Asses.—Health certificate, including mallein-test certificate.

Cattle.—Health certificate, except for immediate slaughter, including tuberculin test for dairy and breeding cattle.

Hogs.—Health certificates, except for immediate slaughter, including statement of non-exposure, except where swine are certified by federal or state veterinarian as having been immunized by the Dorset-McBride-Niles serum method. All swine imported for exhibition purposes must be accompanied by certificate of immunization.

Sheep.—Health certificate, and dipped twice at interval of 10 days in approved dip on arrival at destination or at a safe and convenient point, unless for immediate slaughter.

Who May Inspect.—Federal, state and deputy state veterinarians.

Official.—W. J. Butler, state veterinarian, Helena, Mont.

NEBRASKA.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Health certificate. Tuberculin test for dairy and breeding cattle.

Hogs.—Health certificate and crating for breeding or exhibition purposes. Must be loaded from wagons and not from ordinary chute.

Sheep.—Without inspection from clean territory. Permitted from territory affected with lip and leg ulceration after inspection by government veterinarian and found not to be affected with disease.

Who May Inspect.—Government or state veterinarian or graduate veterinarian authorized by government or state veterinarian.

Official.—Dr. A. Bostrom, deputy state veterinarian, Lincoln, Nebr.

NEVADA.

Horses, Mules, and Asses.—None.

Cattle.—None.

Hogs.—None.

Sheep.—Before entrance into state for grazing, must notify board (state sheep commission) or any inspector in writing. Notice not required for sheep in transit unless they remain in state or are unloaded to feed and rest for a longer period than 48 hours.

Officials.—Dr. T. F. Richardson, state veterinarian, Fallon, Nev.; Mr. Stan. C. Mitchell, secretary state sheep commission, Reno, Nev.

NEW HAMPSHIRE.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate, including tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Qualified veterinarians.

Official.—N. J. Bachelder, secretary, board of cattle commission, Concord, N. H.

NEW JERSEY.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate for dairy and breeding cattle, including tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Official veterinarians of the state or competent veterinarian whose health certificate is approved in writing by state officials.

Official.—Dr. Bruce S. Keator, secretary, state board of health, Trenton, New Jersey.

NEW MEXICO.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Health certificate, including tuberculin test, for dairy cows or the breeding of dairy cattle.

Hogs.—None.

Sheep.—Health certificate. Bucks must be dipped at unloading point, Who May Inspect.—Official veterinarian, state or federal, for cattle. Sheep must be inspected by a federal veterinarian before shipment and by territorial inspector at destination.

Officials.—W. J. Linwood, secretary, cattle sanitary board, Albuquerque, N. M.; Harry F. Lee, secretary, sheep sanitary board, Albuquerque, N. M.

NEW YORK.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Health certificate for neat cattle for dairy and breeding purposes, including tuberculin test.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Federal inspectors, inspectors indorsed by the proper official of the state from which the shipment comes, and the commissioner of agriculture, or duly authorized representatives.

Official.—Dr. J. G. Wills, chief veterinarian, Albany, N. Y.

NORTH CAROLINA.

Horses, Mules, and Asses.—Health certificate when for breeding purposes.

Cattle.—Health certificate, including certificate of tuberculin test when for breeding or dairy purposes.

Hogs.—Health certificate for breeding purposes.

Sheep.—Health certificate for breeding purposes.

Who May Inspect.—State veterinarians, or any veterinarian whose certificate he will indorse; also United States inspectors.

Official.—Dr. W. G. Chrisman, state veterinarian, Raleigh, N. C.

NORTH DAKOTA.

Horses, Mules, and Asses.—Health certificate, including mallein test made within 30 days prior to entry into state. Certificate for stallions should, in addition, show the animals to be free from infectious, contagious or transmssible diseases or unsoundness.

Cattle.—Health certificate, including tuberculin test for cattle over 6 months old intended for dairy or breeding purposes; test to be made within 30 days prior to entry into state.

Swine.—Health certificate stating that no infectious swine disease exists or has existed in locality from which the shipment originated within 6 months prior to date of shipment, unless the swine are certified by a duly accredited federal or state veterinarian as having been immunized by the Dorset-McBride-Niles hog cholera immune serum. Swine brought into state for exhibition purposes at state and county fairs must be accompanied by a certificate stating that such swine have been immunized by the Dorset-McBride-Niles hog cholera serum.

Sheep.—Health certificate showing them to be free from scabies, lip and leg ulceration, or exposure thereto within 30 days prior to date of shipment.

Who May Inspect.—Federal, state or deputy state veterinarians or graduate veterinarian whose inspections are indorsed by officials in charge of live stock sanitary work in the state where inspection is made. All mallein and tuberculin tests shall be made by federal, state or deputy state veterinarians.

Officials.—Dr. W. F. Crewe, state veterinarian, Devils Lake, N. D.; L. Van Es, bacteriologist, state live stock sanitary board, Fargo, N. D.

OHIO.

Horses, Mules, and Asses.—None.

Cattle.—None.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Inspectors of the bureau of animal industry and veterinarians in the employ of the state board of live stock commissioners.

Official.—Dr. Paul Fischer, state veterinarian, Columbus, Ohio.

OKLAHOMA.

Horses, Mules, and Asses.—Health certificate stating particularly that stock is free from ticks.

Cattle.—Health certificate, including tuberculin test for dairy or breeding cattle.

Hogs.—Health certificate, except for immediate slaughter.

Sheep.—None.

Who May Inspect.—Official veterinarians, state or federal, or a graduate licensed veterinarian.

Officials.—M. F. Ikard, superintendent live stock inspection, Oklahoma, Okla.; Drs. J. K. Callicotte and Ben Dobkins, Oklahoma, Okla., veterinarians to the state board of agriculture.

OREGON.

Horses, Mules, and Asses.—Health certificate, including the mallein test, of stock used on railroad or other construction work. Horses that are parts of settlers' effects and animals for breeding need no inspection, but must be free from disease to comply with Oregon statutes.

Cattle.—Health certificate, including tuberculin test for dairy and breeding cattle and all others excepting strictly range cattle.

Hogs.—Health certificate, except for animals for immediate slaughter. No animal can be shipped for breeding or feeding purposes that has come in contact with any public yard, corral, undisinfected car, or other intermediate object that might carry infection. Show animals must be crated.

Sheep.—Health certificates from states in quarantine. Animals must be free from disease. Notice must be given to state sheep inspector or nearest deputy, stating by telephone, telegraph, registered letter, or in person, time and place, when and where sheep crossed state line, locality from which they came, name and residence of owner or owners and of person in control of same, and number, brands and character of the animals. Sheep from quarantined states must be dipped once.

Who May Inspect.—Official veterinarians, state or federal; graduate veterinarians when approved in writing by state veterinarians or like officer, for animals excepting sheep. Sheep to be inspected by official veterinarians only, state or federal.

Officials.—Dr. J. F. Morel, state veterinarian, Corvallis, Ore.; Dr. W. H. Lytle, state sheep inspector, Pendelton, Ore.

PENNSYLVANIA.

Horses, Mules, and Asses.—Must be free from contagious or infectious disease.

Cattle.—Dairy cows and neat cattle for breeding purposes to be accompanied by a certificate of health from a veterinarian who has been certified to the Pennsylvania state live stock sanitary board by the authorities in charge of cattle diseases in the state in which the cattle originate. Said certificate must be accompanied by a temperature chart showing that each animal has successfully passed a satisfactory tuberculin test and is free from disease, or by a special permit authorizing importation of dairy cows or neat cattle for breeding purposes in quarantine, to be inspected and tested with tuberculin at destination by an approved inspector at owner's expense. Special permit to receive southern cattle for immediate slaughter.

Hogs.—Must be free from contagious or infectious disease.

Sheep.—Must be free from contagious or infectious disease.

Who May Inspect.—State veterinarian, inspectors of the bureau of animal industry, inspectors in the state in which the cattle originate who have been properly certified to the Pennsylvania state live stock sanitary board, or licensed and approved veterinarians in Pennsylvania.

Official.—Dr. C. J. Marshall, state veterinarian, and secretary state live stock sanitary board, Harrisburg, Pa.

RHODE ISLAND.

Horses, Mules, and Asses.—None.

Cattle.—Physical examination.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Cattle commissioners of Rhode Island.

Official.—Dr. John S. Pollard, state veterinarian, Providence, R. I.

SOUTH CAROLINA.

Horses, Mules, and Asses.—Health certificate. Mallein test of any exposed animals.

Cattle.—Health certificate except when intended for immediate slaughter. Tuberculin test for dairy and breeding cattle over 6 months old.

Hogs.—Health certificate except when intended for immediate slaughter.

Sheep.—Health certificate except when intended for immediate slaughter.

Who May Inspect.—Official veterinarians, state or federal.

Official.—Dr. M. Ray Powers, state veterinarian, Clemson College, S. C.

SOUTH DAKOTA.

Horses, Mules, and Asses.—Health certificate, including mallein test.

Cattle.—Health certificate, including tuberculin test of dairy and breeding cattle.

Hogs.—Health Certificate.

Sheep.—Health Certificate.

Who May Inspect.—State veterinarian, deputies and inspectors of the bureau of animal industry.

TENNESSEE.

Horses, Mules, and Asses.—Must be free from equine scabies, glanders or other contagious, infectious or communicable diseases.

Cattle.—Health certificate, including tuberculin test of all cattle over 6 months old, except for immediate slaughter.

Hogs.—From public stockyards accepted for immediate slaughter only.

Sheep.—Health certificate issued by an inspector of the bureau of animal industry or other qualified veterinarian, except for immediate slaughter.

Who May Inspect.—State and federal inspectors or other qualified veterinarians.

Officials.—T. F. Peck, commissioner of agriculture, Nashville, Tenn.; Dr. G. R. White, state live stock inspector, Nashville, Tenn.

TEXAS.

Horses, Mules, and Asses.—Health certificate.

Cattle.—Dairy and breeding cattle over 6 months old and cattle for exhibition purposes at any fairs within the state must be accompanied by a certificate of inspection showing them to have been tuberculin tested within 60 days prior to time of entering the state.

Hogs.—Hogs for breeding and stocking purposes or hogs intended for exhibition at any fair within the state must be accompanied by a certificate showing them to have been immunized by the Dorset-McBride-Niles serum method.

Sheep.—Health certificate except when intended for immediate slaughter.

Who May Inspect.—Inspectors of the bureau of animal industry; inspectors designated by the live stock sanitary commission; state veterinarian or state sheep inspector.

Officials.—Mr. W. N. Waddell, chairman, live stock sanitary commission, Fort Worth, Tex.; Dr. E. R. Forbes, state veterinarian, Fort Worth, Tex.; Mr. J. A. Whitten, state sheep inspector, Eldorado, Tex.

UTAH.

Horses, Mules, and Asses.—Health certificate, including mallein test. Certificate to show stallions and jacks free from dourine and mares free from contagious abortion.

Cattle—Health certificate for dairy and breeding cattle, including tuberculin test.

Hogs.—Health certificate, certifying that they have been immunized by Dorset-McBride-Niles hog cholera serum within ten days of date of shipment.

Sheep.—Health Certificate.

Who May Inspect.—Federal, state or deputy state veterinarian, or qualified veterinarian approved by the state or federal authorities.

Officials.—Dr. A. Carrington Young, inspector, Salt Lake City, Utah; A. A. Callister, secretary state board of sheep commissioners, Salt Lake City, Utah.

VERMONT.

Horses, Mules, and Asses.—None.

Cattle.—Must have permit from the state cattle commission and be held in quarantine until tested with tuberculin.

Hogs.—None.

Sheep.—None.

Who May Inspect.—State cattle commissioner and his veterinarians. Tests made in another state for shipment into Vermont are accepted when approved by the proper official of that state.

Official.—F. L. Davis, cattle commissioner, White River Junction, Vermont.

VIRGINIA.

Horses, Mules, and Asses.—None.

Cattle.—Health certificate for dairy and breeding cattle, including tuberculin test, made within the preceding 4 months.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Inspectors of the bureau of animal industry, state veterinarian and qualified veterinarians whose certificates are approved in writing by the state veterinarian or live stock sanitary official of the state in which animals originate.

Official.—Dr. J. G. Ferneyhough, state veterinarian, Burkeville, Va.

WASHINGTON.

Horses, Mules, and Asses.—Physical inspection.

Cattle.—Tuberculin test for dairy and breeding cattle. Physical inspection for beef and feeding cattle.

Hogs.—Physical inspection.

Sheep.—Physical inspection.

Who May Inspect.—Inspectors of the bureau of animal industry and state veterinarian and assistant state veterinarians.

Official.—Dr. S. B. Nelson, state veterinarian, Spokane, Wash.

WEST VIRGINIA.

Horses, Mules, and Asses.—None.

Cattle.—None.

Hogs.—None.

Sheep.—None.

Who May Inspect.—None needed.

Official.—John M. Milan, secretary board of agriculture, Charleston, West Virginia.

WISCONSIN.

Horses, Mules, and Asses.—Health certificate, approved by state veterinarian.

Cattle.—Health certificate, including tuberculin test for dairy and breeding cattle over 6 months old.

Hogs.—None.

Sheep.—None.

Who May Inspect.—Graduate veterinarians approved by the state veterinarian of the state from which the animals come.

Official.—Dr. O. H. Eliason, state veterinarian, Madison, Wis.

WYOMING.

Horses, Mules, and Asses.—Health certificate. Stallions and jacks require health certificate, including mallein test.

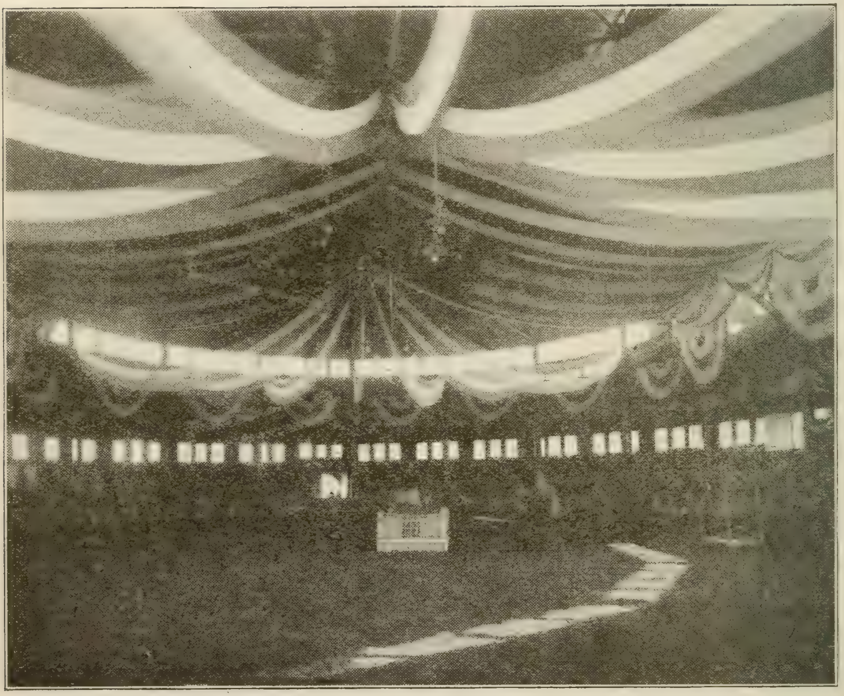
Cattle.—Health certificate, including tuberculin test for dairy and breeding cattle.

Hogs.—Health certificate. For exhibition must be immunized with Dorset-McBride-Niles hog cholera serum.

Sheep.—Send 10 days' notice to secretary state board of sheep commissioners, Cheyenne, Wyo., inclosing 3 cents for each sheep and 25 cents for each buck. All sheep to be dipped twice at destination within 15 days after arrival. All import sheep considered as being dipped for scabies and with such dip as prescribed or recognized by board of sheep commissioners for scabies.

Who May Inspect.—Federal, state or deputy state veterinarian or qualified veterinarian approved by the state or federal authorities.

Officials.—Dr. Benj. F. Davis, state veterinarian, Cheyenne, Wyo.; Dr. H. S. Eakins, secretary-treasurer, state board of sheep commissioners, Cheyenne, Wyo.



Interior View Live Stock Pavilion, Iowa State Fair.

PART XII.

Papers on Live Stock, Agriculture and Miscellaneous Topics—Papers Read Before County Farmers Institutes, Etc.

THE IOWA STALLION AND JACK LAW.

SENATOR A. L. AMES.

(Before the Iowa Draft Horse Breeders' Association.)

Mr. Chairman, Gentlemen of the Horse Breeders' Association, and Students of the Short Course of Iowa.—It is a great pleasure to me to be with you at this time. I am glad of the opportunity of going over this law and am also glad that you have in your hands not only a copy of the law in this state but other states as well, so as to give you some conception of the differences there is between the laws of other states and the Iowa law. Iowa has the best horses, grains, soil, and people and it will continue to be the best if we safeguard it. I have received letters from farmers and breeders over the state calling my attention to this very fact, which is the reason why I devoted my time two years ago to the drafting of this law. I was not entirely alone in this work for I had the assistance of all the men that I could get hold of who were working for the same thing and were interested, as well as the help of associations in other states. I had such men as Dean Curtiss of this school, and the directors of the breeders association in Chicago. In fact we went into this matter as fully and carefully as possible in drafting this law. And any law, I do not care what it is, that is to protect the people of this or any other state in a certain way will have some weak points and necessarily work some hardships on certain individuals. Also I believe that this law in the state of Iowa is one of the best of any of the laws in the other states in the union.

Now there are a good many points that have been criticised. They say that the law is not constitutional. We went into that matter with some of the best constitutional lawyers in the state and determined as far as we could that the law is constitutional. The police department in this state makes this law constitutional in my opinion. I have no more right to bring a horse in this state that is affected with a contagious disease and offer him for public service or to my neighbors than a man has to open his door in case of diphtheria and distribute it to his neighbors. The law is quite plain I believe in naming all of its holdings.

The question of disease is one perhaps that will most vitally interest the stallion owners of the state. It is article three of the law which requires earnest consideration and the division of these diseases perhaps would vary in the minds of the different men. On the whole they are perhaps as well as you could possibly arrange, although I am frank to say in the original drafted form it was not quite as stringent as it now appears. A good many of the breeders in the state and the farmers as well objected to leaving the two spavins in the list of disqualifications. In fact the bill would not have passed the house two years ago unless those two diseases or unsoundnesses were placed in the first lines of the law. It was my opinion to leave them optional and allowing the horse to stand on the minor difficulties but it was written in the law and possibly for that reason I do not think you will find one single disease or common unsoundness in that list but what is transmissable. Not one. You men who are breeders ought to know that a stallion that has a curb or bog spavin has unusual weakness in that particular place so that in a majority of the cases the progeny of that animal will be weakened in that particular part. And that is one thing we want to get away from in breeding animals of any description in this state and particularly horses.

We want a class of horses in this state so that when we have a buyer come into our yards from Chicago we wont have to make an excuse for a horse for this thing and that, but we want the kind that is clean and sound so that when we have raised him to four or five years old and he goes on to the market he will sell from $250 to $300 instead of $50 or $75. That was the idea we had in passing this stallion law. We are striving to have in this state the best horses that grow, the best cattle, the best hogs and the best men and women and in order to do that we must have the best kind of stock to commence with. I do not believe you can make these laws too stringent. To be sure some individuals, as I said before, are bound to be hurt in some way. A horse may have some accident and develop some weakness, a constitutional deficiency that will prevent him from being registered. In that particular instance it would be well to allow him to go on as a breeder. But just as soon as you open that door to that man you will open a door for other men who can claim most any thing. We are making a law for the people and not the individual. We want to make that law so stringent that there will be no question about it. One great difficulty in making laws is to make them clear enough. You want them written so clear and plain and written in the Anglo-Saxon language so you will know what it means. There is no question about what this law means, you can read, it is as I say and there it ends.

I do not know whether it would be wise for me to go on and take up the law further or not. You have it there in your hands. In the drafting of the law it was the idea of those of us that were trying to make a law for the benefit of the state to lay as much importance as possible on the registered animal. We want to do away with the use of grade stock in this state by all means. I want to say that the record you find in the herd books of this state or country is no more or less than the honesty of the man who raises the animal. You can go yourself and swear in to any of these that you want to and force registry but we want to make it impossible so far as we can. We want every one that has stock whether cattle, horses, sheep or hogs, in the near future to be able to trace the pedigree back to some responsible registry. I believe your organization is one of the best things that could happen for that particular line of work for the horse industry. We want to make it easy for a man to raise the registered animal. The law provides that if an animal is not registered the owner has to say the animal is a grade and publish the fact on the bill and every place where the animal is advertised. There is no excuse for a man using a grade stallion in this state if he reads the law. It is not a hardship on the man. He does not have to have a veterinary examine the horse and I would just as soon take the breeder's word as the veterinarian's. You as a breeder know whether the animal is sound or not. You cannot raise an animal and be with him from the time he is born every day and not know the weakness of that animal. You know whether he is subject to an ailment that will disqualify him. Nine times out of ten you will be nearer the truth as regards that animal than the veterinarian, the average veterinarian. If you have a horse for sale or service you should see where he is weak, if at all, and whether he is free from any disease that would disqualify him. If not he should not be offered for sale or service. In section five of the law you will find the means of preventing a man from standing a stallion that you consider unfit for service. You select one man, the board of agriculture selects another and these two agree upon a third. This committee renders a final decision and if you are right the state pays for it. If you are not right you pay for it. In other words we want to have this law so clear and simple that it will be next to impossible to violate the law and if it is violated to provide an easy means of rectifying that mistake and put it right so that all this business which is done under cover will be taken away from the horse business. It is up to you as breeders of this state to get away from it. You want the standard so high that when a horse breeder says that his horse is sound it will go just as far as the horse can travel. I want it so simple and plain that there is no question about it. There will be some changes you want to suggest. We did not claim that this was perfect and did not when it was passed. You cannot make a law that is absolutely perfect. You will need to make some changes. You want to look at this question from all angles, see how it affects the breeders of the state and then make the change if you are satisfied that it is changed for the interest of all people. The draft horse industry is one of the greatest industries of this or any other state. I believe this law, while it is in its imperfect form, if you please, is one of the best ones ever made in regard to horse breeding industry.

WHAT HORSES MEAN TO IOWA.

BY HOWARD VAUGHN, SECRETARY OF THE IOWA DRAFT HORSE BREEDERS' ASSOCIATION.

[From Profitable Breeding and Farming.]

Forty-five per cent of the money invested in livestock in Iowa is invested in horses. Our horses outrank in value any other single agricultural product or crop by nearly twenty per cent. Of late years we have been making much ado about the extent of our cattle interests and the great value of the pork that is produced in Iowa. While much livestock has been of much importance, yet the draft horse is easily the greatest single product contributing to Iowa's agricultural wealth. The value of Iowa horses is 49 per cent greater than the combined dairy and beef cattle interests of the state. We could ship out of the state over half of our horses and still have enough left to represent more capital than the total value of our hogs. The actual census figures our horses are worth $60,000,000 more than our total cattle interests, $100,000,000 more than the value of our hogs, thirty times as much as the value of our sheep and fifteen times the value of our poultry.

Among the other states of the union, Iowa easily holds first rank in horse production. The following table illustrates this statement by giving the number and value of the horses in a few of the leading horse producing states.

RANK OF STATES IN HORSE PRODUCTION.

Iowa	1,568,000	worth	$177,184,000
Illinois	1,497,000	worth	172,155,000
Kansas	1,169,000	worth	112,224,000
Texas	1,158,000	worth	85,692,000
Missouri	1,095,000	worth	111,690,000
Nebraska	1,059,000	worth	96,369,000

There is but one state that records more stallions than Iowa. That state is Illinois and undoubtedly a part of her lead in the number of stallions is due to the fact that the stallion registration law has been in operation longer in Illinois and would therefore be expected to be more accurately enforced. The following table shows the number of stallions, grade and pure bred, which have been registered in each of eleven out of the fourteen states that now have stallion registration laws.

State	No. Stallions	No. Pure Bred	No. Grade	Per cent Pure Bred
Iowa, 1911	7,866	5,461	2,405	69
Minnesota, 1911	5,065	1,792	3,273	35
Wisconsin, 1911	3,259	1,514	1,745	46
Kansas, 1911	7,843	3,255	3,588	41½
New Jersey, 1911	215	121	94	56
Pennsylvania, 1909	2,254	823	1,427	36
North Dakota, 1911	2,438	1,052	1,386	45
South Dakota, July, 1912	3,217	1,588	1,629	49
Montana, 1910	755	457	298	60
Illinois, 1911	9,435	5,356	4,074	57
Oregon, 1911	1,046	612	434	57

LICENSED STALLIONS BY STATES.

By the above table we note that there is a wide variation in the percentage of pure bred stallions in use in the different states. Comparatively few states can show 50 per cent of pure bred stallions. This fact partly accounts for the very large proportion of mediocre horses that are found in the leading horse markets and the comparative scarcity of really good horses either of the draft or roadster type. The fact is, we have been slow in recognizing the actual money returns incident with the production of the high class horse. Stallions of desirable breeding and type have been known to produce colts worth $100 to $200 more at five years of age than colts from grade, mongrel or scrub stallions of poor conformation. It is true that Iowa stands at the head of the list in the percentage of pure bred stallions but even in Iowa that percentage is too small. Our leading markets are demanding the big horse with heavy bone and good quality. But a few days ago we saw an Iowa farmer get $350 for a grade Belgium gelding out of a plain farm mare but sired by a very high class pure bred stallion. Another farmer got $160 for a gelding of the same age in practically the same condition and out of very much the same type of mare but sired by a stallion that weighed at least 300 pounds heavier and showed larger cleaner bone with decidedly heavier muscles. We may like a 1200 or 1300 pound chunk for the corn plow or a "handy weight" horse to drive to town, but as long as we continue to breed for that type of horse we cannot expect to make satisfactory profits on our horses. The market pays highest for the big horse—pays more than it costs to produce him in comparison with the "heavy weight" chunk. The heavy horse is therefore the most economical horse to produce. The following table of prices at the various weights taken from one of the leading horse markets illustrates this fact.

1600 lbs..............	$203	1800 lbs..............	$270
1650 lbs..............	216	1900 lbs..............	320
1700 lbs..............	233	2000 lbs..............	400

The fact is that even if we breed for the heavy durable type of drafter there will be enough medium weight horses resulting to supply all the demand for chunks. By breeding for heavy horses we may expect a larger proportion of high priced horses but along with them some ordinary stuff. If we breed for the ordinary horse we certainly cannot expect to get the high priced horse unless in case of the very rare exception. It is, therefore, to our interest to pay particular attention to the type of stallion we use in order that we may realize a greater profit from the resulting colts.

Iowa's premier position in the producing of horses is due to a natural fitness for raising horses. Corn, oats and blue grass are the best horse feeds and there is no state whose soil produces these crops in greater abundance. The Iowa farmer has long recognized the value of live stock farming. He appreciates more than any other farmers of the middle west at least, the necessity of marketing his crops through his livestock and thereby retaining a large per cent of the original fertility of the soil on his own farm. There is no method of livestock farming that is capable of producing better returns than the raising of draft horses. The average farm horse works practically one-third of the time. Obviously it is poor economy to keep a strong gelding to work only one day out of three. It is not desirable nor possible to do the farm work with old or very cheap horses. The heavy brood mare of good type will work one day out of three to pay for her feed and will raise a colt for profit. Truly, it is a bit easier to work a team of well broken geldings than it is to handle mares that have colts at the barn or young horses that are not yet seasoned to hard work. As far as that goes, it is easier to sit by the fire and read on a cold winter day than to go out and feed the stock. If mere freedom from effort is what we are seeking we should not work even a team of geldings. If reasonable returns for our labor are what we want, then the brood mare and her colts can supply them far more satisfactorily than the gelding.

It is plain then, that a very large part of our working capital is invested in horses. It is also evident that the dividends we are getting from that capital could be much increased if they were invested in better stallions and in more mares and fewer geldings. From the profit standpoint the need of Iowa is not more horses, it is better horses.

FEEDING DRAFT COLTS.

BY WM. CROWNOVER.

(Before Annual Meeting of the Iowa Draft Horse Breeders' Association.)

In my little talk tonight I do not intend to give you any special method that might be given to some special colt fitted for some special show. I know that the average farmer does not care for that and would not do it if I told him how, and as I can say a few things that I feel ought to be said in regard to breeding and management without interfering with some one else's subject I don't think I will stick entirely to my text. I just want to give you a little practical common sense talk. If I can impress upon you the importance of giving the colts plenty of feed every day that is in sight in the oats bin and hay mow I and the colts both will be pleased that you have been here.

I heard Mr. Cownie in one of his lectures say that the best cross he could give a hog was the corn crib. It may be as truly said of the colts that the best cross they can have is the oats bin. I am sorry to see so many farmers who seem to think that as soon as the foals are taken off the mothers that they are able to take care of themselves, and will say, "Well go and hunt up what you can find to eat now and make a horse." Very frequently a colt is worth more when taken off the mother than they are as yearlings when improperly fed. If we do not feed the colts good the first year and make good yearlings we are sure to lose one-fourth to one half the value at maturity. Show me a good feeder and I will show you a good breeder, and a man that will pay $25 service fee for a good stallion. Show me a man that thinks his grain of more value in the elevator than in his stock and I will show you a man that will use a $6 scrub. Show me a good bred horse and a poor fed one and I will show you a poor horse. Show me a poor bred one and a good fed one and I will show you a fair horse. Show me a good bred one and a good fed one and I will show you a market topper.

Too much cannot be said in this crusade against scrub sires. From what I have seen I believe that a lot of farmers ought to have a guardian when it comes to live stock breeding. They seem to think that a few dollars saved in the breeding end of the transaction is money made. They seem to loose sight of the selling end where the values are at least 50 to 100 per cent more from good pure bred sires than from scrubs. I call such methods five cents wise and five dollars foolish. What man is there contemplating building a skyscraper that does not give due consideration to the foundation and the material entered in the construction. It is just as important to have the best of feet, pasterns, and joints with a heavy, flat, clean, hard, flinty bone in the horse and when you get such a foundation you can build on the top just as large as you like.

I am sorry to see farmers neglecting the feed and fit their horses for market. They feed their beef and dairy cattle, their hogs and sheep, that they may receive top prices, but the horse is sold neglected and thin, his hair standing up and rough as he can be.

Now there is no animal that will pay better to feed and fit for market than the horse and the farmers of Iowa are losing $100 to $150 on every horse so neglected. There are just two things that are sure to bring success or failure in draft horse breeding, namely—breeding and feeding. The one is just as important as the other. Either one of them properly handled and the other neglected means failure.

Then how and when shall we begin to feed these colts? I worked for a man one time who raised his horses as scavengers and on the first of March as the colts were nearing three years old he would say, "Boys, you had better get these colts in the barn and feed them a little corn and break them to hitch as we will have to work them this spring." How improper is such management. How many do nearly the same thing. But I am thankful that we are advancing from such methods. Instead of waiting until the colt is nearing maturity before we begin to feed let us begin at the proper time. Say eleven months before it is born, give this good mother who is expected often to do her day's work in the field and nourish her own life, the life of her baby foal, and the life of the unborn making in all three lives to nourish, give her some healthy feed. Do not neglect her, give her plenty of bone, muscle and milk producing food, such as oats, bran, alfalfa meal, some nice clover hay, raise a small patch of sugar cane for winter feed. They enjoy it, so much. There is no better or cheaper feed to raise than cane. A good piece of land will produce eight to ten tons per acre and there is not a pound of waste. They will eat every stalk clean and the larger the stalk the better they like it.

In the winter time turn the prospective mother out in the fields every day for exercise. She needs it and enjoys it in any weather except a cold rain or sleet storm. Don't expect her to break the roads through the snow banks, nor do the heavy hauling in the muddy spring-time roads. If you do you are sure to have some fatalities. I keep a pair of heavy geldings on the farm for no other purpose than to take the hard places off from the brood mares and I have found it very profitable. Give her her box stall intended for foaling at least a month before she is due. This allows her to get accustomed to the change in temperature that sometimes exists between the farm stable and the box used for foaling mares. There is often great risk of both mother and offspring taking a cold when the mare is kept in a warm stable up to foaling and then turned into a draughty box stall where it is much colder. Foals will usually stand as much exposure as the mare has been accustomed to. For instance, a foal from a mare that has been wintered outside will bear an amount of exposure that would soon kill one from a mare that has been accustomed to a warm stable.

After the mare has foaled it is best to leave her and the foal to themselves. If the foal is strong he will get on his legs and nurse without help. Too much interference often makes the mare restless and prevents her from letting the foal nurse. Foals during the first few days require a good deal of attention. One great evil is when foals get costive, and deranged internally. This may be avoided in a great measure by a laxative food, such as a warm bran mash which will have the effect of keeping the foal laxative also. But where mares can get green fresh grass or have been fed laxative food little doctoring is required. More harm than good is often done by treating the foals. It is best to treat the mare and not the offspring. It sometimes happens that the flow of milk is greater than the foal can take. In such cases it is well to draw from the udder two or three times a day until the foal is able to take care of it all. If it is allowed to remain in the udder it becomes unwholesome and liable to derange the foal internally. But as soon as the foal is well under way and able to take all the milk the mare gives, means should be taken to increase the quantity as well as the quality of the milk. Oats with bran or alfalfa meal and other green feeds will produce the desired result. If the weather is warm in April and the fore part of May turn the mare out on grass after the cold dew is off and the sun is shining. Young animals derive great strength and benefit from sunshine. Of course in the extreme heat of the last days of June and July this treatment must be reversed. Keep the very young foal in from the extreme heat of the day. Pardon me for saying so much about colt management and feeding in early stages but I have learned from experience that the most critical period in all the colt's life that the feeder has to contend with in rearing the colt, is from birth to four weeks old.

Mares should have at least fourteen days rest from work after foaling and if farm operations will admit, longer. When the mares are put to work they should be used only a few hours at first, and the time gradually increased. Anyone who has watched a mare and foal will know what a great number of times the latter will nurse in an hour. It is therefore very unreasonable to take a mare away from a very young foal and work her a half day without allowing it to nurse. When they get older and can take some nourishment it is different. I do not work my mares after foaling if I can possibly avoid it for I know that the mare that is being worked cannot possibly have the amount of nutrition to spare for the foal that she should have if idle. If a mare gets heated when at work she should not be allowed to nurse the foal until she has cooled down, and has some of the surplus milk that has remained too long in the udder to be good for the foal drawn from her. This is the general cause for scours which sets the colt back and is fatal if it becomes of a chronic nature.

To raise horses successfully and profitably they should be constantly kept improving. The raising of young stock may be compared to the progression of a railway train. We all know what a tedious thing it is to travel a long journey by rail when the stops are numerous and we grumble at the time wasted. It is not only the length of time the train stops, but the time it takes before it can be got properly on to speed again. The same way with the colt, if by neglecting to supply suitable food or by mismanagement you allow the animal to come to a standstill in its growth and condition it will very often take a couple of months good feeding before any apparent improvement in condition is made. This is a serious loss of time and food which means a pecuniary loss to the owner, whereas if sufficient food is supplied to keep the colt constantly improving you will have a good return for the quantity consumed. To keep colts constantly improving must be the result constantly aimed at.

The best means to secure this improvement must next be considered. Size, bone and muscle are the three things necessary for a draft horse to possess. They can only be obtained by proper breeding and feeding of food suited for their conformation and by exercise. Generally when the colts are three weeks old they will begin to nibble a little oats or bran. Encourage them by having a few nice sweet crushed oats in your pocket and when you go in the stall or pasture scratch them on the back with one hand and let them eat the oats out of the other. It will only be a short time until they will be looking for you. I want to say that kindness is one of the best foods that can be mixed with the ration. A sulky groom that is always kicking the animal out of his way is not fit to feed anything and must not be tolerated. Provide a little box in the stall or pasture and while you feed the mother don't forget to have a little pan for the foals. I would not advise buying alfalfa meal or bran for a ration. When the mares and colts are on good pasture they do very well on oats alone. Before weaning time mix a little alfalfa meal with their oats and get them started on full feed. Then when they are taken off the mother they will go on and grow and keep their flesh.

In the winter time give them plenty of clover hay if you can get it, or cane. Keep up the ration of oats and aifalfa meal and a small amount of corn will do good. Let them out every day for they must have exercise to develop their feet and muscles. They will roll in the snow banks and enjoy it. The next spring you will have colts at twelve months old weighing close to twelve hundred pounds and better, and you are now well on the way to make a good draft horse. When the yearlings go on grass give them a ration of three or four quarts of oats twice a day, and when the heat and flies are bad increase the ration a couple of quarts a day. When winter comes again duplicate the ration you used before only increase as the case may require. You can with good results at this time increase the corn and alfalfa and cut down some on the oats. The alfalfa will balance the corn. Try alfalfa meal mixed with 40 per cent molasses. It is the best appetizer, conditioner, laxative and bone and muscle builder with other grains there is. It is cheaper than bran and of far more value as a horse feed. There is no fixed rule as to the number of pounds of grain or hay that will apply to every horse or colt. The feeder must use judgment as not every horse feeds alike and does not require the same mixed ration. For instance if I had a big rough raw boned colt I would feed a heavy ration of corn and get a top on as soon as possible. It is wonderful how the digestive organs of the horse can be developed by proper and gradual feeding, and there is no animal that will make more gain for the grain consumed than the horse. It is common for a good feeder to put on from six to twelve pounds a day. Good horse flesh is selling from twelve to twenty-four cents per pound on the open market and a few extra individuals much higher.

Should we not then pay more attention to the proper feeding of our horses and send them to market as a finished product. We can raise here in Iowa all the necessary feed and can develop as good a horse as any country in the world can produce, and there is no one can finish them for market cheaper than the farmer. Then why continue sending our big colts and our feed all raised on our own farms down to the eastern feeders and finished by them at a good profit and go on the eastern market to be as a product of their state. We have all the raw materials so let us send it to market in a finished form and have it stamped "Made in Iowa."

CO-OPERATION AMONG FRUIT GROWERS.

(Farmers' Bulletin 522, United States Department of Agriculture.)

Developing methods of production and distribution of agricultural products along purely economic lines is of comparatively recent origin, most attention having been given possibly to the side of production. However important it may be to be able to grow crops in large quantities or of particular qualities at a minimum cost, it is equally important to be able to dispose of them in the most economical way and to the best possible advantage, for frequently the easiest and largest profits in any business are those made through methods of handling, marketing, and distribution; and it is here that judgment based upon economic principles must be exercised and careful dealing resorted to if the highest returns are to be realized.

A common method of disposing of the crop is by selling directly to retailers, which has proved successful in some instances by choosing only one dealer in a place and putting nothing but first class material on the market. The most usual method of disposing of fruit crops, as contrasted with selling other farm products, is through commission merchants. This arrangement, however, has not proved entirely satisfactory, the reasons for which are attributed partly to the system, partly to the middleman, and partly to the producer, the middleman always looking out for his individual interest, taking advantage frequently of the producer's ignorance of marketing and market conditions, while the producer in many instances performs his part of the transaction in a careless, indifferent or haphazard way. The business is conducted on the plan that if there is any profit it belongs to the commission man; and if any loss, it goes to the producer. This frequently invites dishonesty, and much swindling has brought commission men as a class into disfavor and sometimes unjustly.

Selling through co-operative associations, which is more largely practiced by the fruit growers of the west than any other section of the United States, has proven successful just in proportion as the members have followed the rules, regulations and instructions of such associations, which in many cases has been done with very gratifying results. In addition to returning profits to the producer, which formerly went to a number of middlemen, co-operation has taught the grower the economic value of a first-class product; the economic importance of picking, packing and handling his produce; and fair dealing with the purchaser and public.

W. H. Chandler, of the Missouri Experiment Station, who has secured information from quite a large number of co-operative associations regarding their methods of distribution and marketing fruit, points out that the growth of the co-operative movement among fruit growers in the United States has been very rapid during the past ten years, even surpassing the expectation of the most sanguine and best informed men interested in the fruit business. A number of failures among the organizations, however, are reported.

From the reports of a number of successful associations submitted to the station it is shown that co-operation enables growers to make use of a number of better business methods. (1) By enabling them, through their manager or representative, to meet on equal terms the men with whom they deal. Their representative, thoroughly understanding the markets, "with all the growers and a good pack behind him controls a business that demands respect, and he should generally be able to set the price." It must be remembered, however, that co-operation is not for the purpose of creating a monopoly or forcing unnatural prices for the product. (2) It frequently brings about or forces track selling, which in the opinion of some brings better results than consigning, one association reporting that for 272 cars consigned it received an average of $1 per crate and for 288 cars sold on track $1.66 per crate. (3) Wholesale dealing is made possible, not only in selling farm products but in buying anything the grower needs, especially packing materials, spraying materials, fertilizers, and the like. (4) Because of the larger business it controls the association is likely to get better service from the railroads, cold-storage plants, etc. "Then it is in a position to secure adjustments with the railroads and other large concerns on points of disagreement, when the cost of litigation would make such adjustments impossible with the small grower." (5) Men of better business ability than the average grower can be secured to manage the association, which means much in the economic disposition of a fruit crop or most any other crop, for many of the best growers, who understand their trees and the methods of care the best, are not the best adapted to deal with men and markets and market conditions.

Co-operation further enables growers to make use of fruits grown in small quantities, which are often wasted because no man has enough to sell to advantage. With co-operation a car could often be loaded and the fruit used to some advantage to each grower, carload lots being considered the economic unit of shipment. It secures better equipment for handling a crop in a section, as disorganized sections are less likely to have the necessary cold storage, precooling and other equipment for the best handling of a fruit crop. In addition to the benefits of co-operation already mentioned, Mr. Chandler notes the following: (1) The crop may be distributed so as to prevent gluts in the market; (2) it enables the growers to establish a brand that will be known in the markets and will thus insure better prices; (3) it insures better care of the orchards; and (4) in nearly all cases it results in greater stability of the industry.

Among the difficulties in the way of co-operation are:

(1) The fact that independent growers who do not help support the association get many of the benefits received by the members without paying for them. This will be evident when it is considered that one of the greatest functions of co-operation is proper distribution; and if the association keeps fruit, for example, out of the way, there is little danger of the independent grower's fruit going into a glutted market; consequently he will get nearly as good, if not as good, prices as members. This being true, independent growers will be slow to join the association, and members seeing independents doing as well as they, without having to pay their share toward the support of the association, may tend to drop out.

(2) The difficulty of keeping the quality of the goods handled by the association as high as the quality of goods that would be handled by the best growers working independently.

(3) Crop failures that get the association out of working order on off years.

(4) A spirit of envy and lack of confidence and support of the managers by the members.

Another impediment in the growth of co-operation which might have been noted is the difficulty of securing funds to finance the production and marketing of the crop in the way prescribed by the association. However, it is possible to meet this difficulty by carrying the principle of co-operation a step further and securing loans through a system of co-operative credit, which has done much for European farmers toward solving economic problems of the farm and community. Mr. Charles Douglas, of Scotland, as quoted in a bulletin of the Missouri station, says:

"The greatest practical obstacle in the way of agricultural organization is generally the difficulty of finance. A very large number of those who might benefit most by co-operation are prevented from taking advantage of it because they deal on long credit with the merchants who supply them. It is this fact which has chiefly led to the development of co-operative credit as an essential adjunct to co-operative purchase. * * *

"The fundamental idea of the Raffeisen banks, which are the general model for co-operative credit in agriculture, is that the farmers in a small area should combine to find credit for one another. They provide loans for approved reproductive purposes; and the banks rely for their success on the knowledge which their members and managers have of local circumstances and of the character of the applicants, as well as on the fact that each member, being implicated with every transaction, has an interest in seeing that loans are only made for suitable purposes and to reliable persons. It is an interesting corroboration of the soundness of this principle that these banks do not in practice have any bad debts. Both in Germany and in Italy the banks are closely associated with purchasing societies, so that the borrower has the advantage not only of credit on reasonable terms, but also of co-operative purchase and of the advice and guidance of those by whom the loan is sanctioned.

"Regarding the secondary results brought about by co-operative action, it may be said that they are several in number and decidedly far reaching in their effects. Increased crops and increased prices spell, of course, larger incomes and larger profits, the influence of which stimulates and revives rural life on its social no less than on its economic side. Public schools, country churches, other public institutions, and general rural life are apparently made better, all of which tends to check the drift of rural population to towns and cities."

TILE DRAINAGE—ITS EFFECT ON CROPS.

S. F. SPARKS, WALKER, IOWA.

(Read at the Twenty-Seventh Annual Session of the Northwest Division of the Linn County Farmers' Institute, December 19, 1912.)

When our forefathers landed upon the shores of this country whether at Salem, at Jamestown or St. Augustine, they found this country peopled with a hardy race of mankind, splendid as types of human beings, unsurpassed the world over, who in their savagery had worked out a form of semi-civilization. They had a form of government. They tilled the soil. They conserved their food supplies. They built towns and villages. Let us read what Col. Roosevelt says about the Creeks:

"Bears had been exceedingly abundant at one time, so much so as to become one of the main props of the Creek larder, furnishing flesh, fat, and especially oil for cooking and other purposes; and so valued were they that the Indians hit upon the novel plan of preserving them, exactly as Europeans preserve deer and pheasants. Each town put aside a great tract of land which was known as 'The beloved bear ground,' where the persimmons, haws, chestnuts, muscadines and fox grapes abounded and let the bears dwell there unmolested, except at certain seasons, when they were killed in large numbers. However cattle were found to be more profitable than bears and the 'beloved bear grounds' were by degrees changed into stock ranges.

"Many of the chiefs owned droves of horses and long horned cattle, sometimes as many as 500 head—besides hogs and poultry. Their fields of rice, corn, tobacco, beans and potatoes were sometimes rudely fenced in with split hickory poles.

"For food they used all these vegetables, as well as beef and pork and venison stewed in bear's oil; they had hominy and corn-cakes, and a cool drink made from honey and water, besides another made from fermented corn, which tasted much like cider.

"They sifted their flower in wicker-work sieves, and baked the bread on broad, thin stones—moreover, they gathered the wild fruits, strawberries, grapes, and plums, in their seasons, and out of the hickory nuts made a thick, oily paste, called hickory milk.

"They spun the coarse wool of the buffalo into blankets, which they trimmed with beads. They wove the wild hemp in frames and shuttles. They made their own saddles. In summer they wore buckskin shirts and breech clouts; in the winter they were clad in the fur of the bear and wolf or of the shaggy buffalo."

We read so much in our histories about the Indian on the warpath and so little about his domestic life and struggles for food, that a glimpse at this latter side of his life is very refreshing.

The story of the American Indian is the story of all peoples of the earth since the angel at God's command led our first parents out of the garden of Eden and shut the gate—and the decree went forth, "In the sweat of thy face shalt thou eat bread, till thou return unto the ground."

Our early pioneers were men and women of strong, vigorous bodies and they produced large families and these with the stream of immigrants from over the seas soon filled up the seaboard land, and the restless pioneer unused to close communities and imbued with the freedom of the Indian life turned longing eyes toward the land of the setting sun. He stood and looked at the "great blue wall" that as a barrier obstructed his progress towards the lands to the westward and dreamed of their fertility and their beauty and their abundance of game.

George Rogers Clark, Daniel Boone, Nollichucky Jack Sevier, Henderson and Harrod—along with other pioneer heroes blazed a way through the "Blue Wall," led forth a stream of hardy settlers, with their wives and children into the new garden of Eden—the blue grass country of Kane and turkey--of deer and buffalo—and here amid hardships—almost unbelievable by this generation—where every step of their progress was contested by the Indian they laid the foundations for the great commonwealth of Kentucky.

From time to time there drifted into this land the refuse, cast off by the older colonies. However they got their share of their best stock along with these. At times whole churches marched singing into the forts. The preacher leading and thanking God loudly that He had delivered them from the wilderness and the savage.

These earlier pioneers were no husbandmen. They were the scouts, the advance guards of civilization, not the tillers of the soil nor lovers of close communities, and as the land filled with settlers, farther and farther they went afield for game and always grumbled sorely against this horde which had driven the deer from his cover and the buffalo from his wallow.

They looked upon this horde of immigrants as the Indian had looked upon themselves, as interlopers upon their food supply. However, they did not resent it in the same manner as did the Indian. To the northward beyond the Ohio, to the westward beyond the Father of Waters lay untold hills and valleys dotted with buffalo and deer and elk, and once more the pioneer treked only to be followed by swarms and swarms of energetic, progressive, pushing people—into Missouri and Kansas, Iowa, Nebraska and the Dakotas—on and on and on until checked by the shores of the mighty Pacific. Such is a brief outline of the settlement of this very land we call our beautiful Iowa.

For what were all these people braving all these dangers? They were in search of food. The most serious question that confronts the physical man in all ages is the food question—Where shall I get my daily bread? Not, where shall I get my yearly suit of clothes?—but, where shall I get my daily bread?

Through the purpose and the mercy of God the Indian was placed in this country—how and when I know not. But this was his country, and it was and is an exceedingly good land. But he has never proved himself worthy of this land. His opportunities were indeed rare and his responsibilities exceedingly great, but he was never equal to his opportunities nor arose to his responsibilities. His country was destined to become the feeding ground of 100,000,000 of people and perhaps two or even 300,000,000. In fact we know not what the future holds for this country—but we know the Indian was not equal to his opportunity. He has never made much of a success in causing two blades of grass to grow where only one grew before. He has never succeeded in breeding a better grade of cattle or hogs or horses. He has never been able to appreciate his birthright—but has wasted this good land and God has supplanted him and has given his birthright into our hands and the greatest proposition before the people of this United States of America today is, where shall we secure food—not for our immediate use—to feed our 100,000,000 of people. But where shall we and our successors secure the food with which to feed the unnumbered millions, that he who stands upon the mountain top and looks into the future can see peopleing our country from ocean to ocean and from lakes to gulf.

I venture the assertion that our increase in agricultural products has not and and is not keeping pace with our increase in population. And since our corn land has all come under cultivation, the irrigated land of the west does not produce corn, the question is, how are we to produce the excess of corn that is to go towards making and finishing the excess of pork and beef to feed the immediate future increase in population? I need not call your attention the great hue and cry that has already gone up from all over the eastern parts of our country and the countries of Europe concerning the excessive high price of food stuff. The future does not promise any lowering of the price, and unless we producers can increase the yield per acre of our cereals, the problem in the near future will become a serious one.

Take a compass, place one leg upon Ottumwa, Iowa, and with the other leg describe a circle, passing through Salem, South Dakota, Wichita, Kansas, and Indianapolis, Indiana, and you have circumscribed all the real good corn producing land in the non-commercial fertilized corn area in the United States, that need to be considered as producing an amount of corn in excess of local needs. The burden of producing the excess of corn for the needs of this nation rest upon the farmers of this small territory.

The question for the statesman farmer should not be, "How much higher price can I get for my corn?"—for the consumer pays enough now. Nor should he ask, "How may I increase my acreage?" For the problem that confronts us now in our farm operations is to secure efficient help to till our present acreage—but the legitimate statesmanlike question is, "How may I increase the yield per acre?"

I believe theoretically and experimentally that one of the fundamentals in the increasing the yield per acre of our cereals and grasses is the proper underdrainage of our farm lands. When I came to this locality six years ago there was but one farm between the Fairchild corner and six or eight miles south that had any tile drainage upon it and that one farm was the one owned by N. J. Zabokrtsky. Since then Mr. Henry and John Fairchild, John Simanek, Nickloo Zaborkrtsky, Robinson and Sparks, Martin and Jacob Kozina, John and Jacob Lala have each been doing more or less tiling and any one who is in any manner familiar with conditions past and present upon these farms cannot help knowing that underdraining of these farms has been a decided advantage to the operator of each from the standpoint of profit and in pleasure in operating them.

Take for instance John Fairchild's field. Heretofore he has raised some corn upon this field, but I have never seen such healthy looking stalks, nor such large ears as grew this season upon this land that he recently tiled out.

The same is true of Henry Fairchild's field just across the road and in a more marked degree is it true of John Limarek's field. These men have caused two ears of corn to grow where only one little soft nubbin grew before.

Mr. Zabokrsky has had the most of his farm tiled out for so long and has been raising such abundant crops of corn and oats for years and years that it is difficult to make a comparison with the crops of the past two seasons.

Allow me to say that when any man in this locality raises more bushels, and as of good quality of oats and corn to the acre, than Mr. Nick does—that man is entitled to consider himself a successful farmer indeed.

I have endeavored to be a better farmer than Nick. To raise better crops than he. Sometimes I have been successful in my endeavor and sometimes otherwise. This year he beat me raising oats. I don't believe he did so on corn.

I can not speak advantageously upon this subject further without making reference to my personal experience. You people that were familiar with the conditions know that when I took possession of the farm I have lived upon the past six years, that the prior owner made no attempt to farm other than the high land. He used what was known all over this locality as the big slough for a pasture and it was very wet.

If I remember rightly, I have been told that at one time forty-five or fifty head of cattle were drowned in this pasture. You people remember how day after day and month after month, for two long years, my teams passed you upon the roads with load after load of tile from this town. 200 wagon loads of tile each year. Now if you should be traveling near Center Point you would meet my teams hauling 200 wagon loads of grain from this same frog pond slough to market and we are having lots of fun doing so. I think I have a right to say that I am a successful farmer. I am raising two ears of corn where three years ago only sour slough grass grew before which did not make even good rabbit pasture.

Last spring was a very peculiar season. There was a super-abundance of moisture in the soil and the land was exceedingly slow in drying out. Several of my neighbors had their horses down trying to mud in their oats upon untiled land. I had no such experience in seeding my oats.

My men had plowed 140 acres for corn before Neighbor Smith on the Wynan's farm could get into his fields and there is only the line fence between our farms. I was discing before Mr. Kubic had turned a furrow and our farms corner, and Joe Dvorak had one field eighty rods away from my field that he never plowed at all and it grew up to weeds.

Yes, I believe tiling pays.

We have been educated to believe the Indian lived in a tepee of skins and poles and roamed half naked through the forests in search of game and scalps.

But I read that at no time did more than one-half the red men of any tribe take to the war path. These Indians whom we call savages, lived in villages and towns, in houses made of logs and had tables and stools and farmed after a fashion, the adjacent lands.

After more than 100 years of national life we have scattered all through our community farmers who have not advanced one whit more than the Indian has, if they have kept pace with him, and the question is, what shall we do with them? Shall we shoot them? We cannot legally do that but we can eliminate them by supplanting them.

We can do nothing with the suspicious, ignorant, hard-headed man that has advanced but little in civilization. Our only hope is that we may get hold of his children and inspire them so that when the old man has been taken home to be with the angels, and out of the way of his children, they may have a chance to improve.

Our duty towards these children can be, in part, discharged by eliminating from our schools much effete matter and substituting subjects in which they can be interested, and this leads me to say, that while our schools are good in a way, they are so far behind those of Germany, that the Germans have us skinned a mile.

In Germany a child starts to school at six years of age and goes for eight years of twelve months each until he is fourteen years old, then while he is yet young he commences to learn a trade, and when he is grown he is ready for the duties of a man.

Here we send our child to school from six to eight months in a year and by the time he is grown we have a dude out of the boy and a wall flower out of the girl.

I overheard men talking in a hotel some weeks ago. One said, "That a half dozen of his boy companions had been sent to college and been graduated and not one of them could feed himself."

Education divorced from avocation is positively harmful. I read that 40 per cent of our graduates from our agricultural college return to the farms and become actual farmers. Would then that we could so arrange it so we could put every farmer's son in our agricultural college.

And now one word to the Hon. Mr. Barry. When you go to Des Moines to discharge the duty we have delegated to you, don't be stingy with our money when you come to consider the needs of our agricultural college. Better spend a million in experimenting and lose every dollar of it, than cripple our work there and the interests of generations yet unborn, by withholding more than is meet.

WINTER PROBLEMS.

C. H. TRUE, EDGEWOOD.

(Read at the Annual Meeting of the Iowa Bee Keepers' Association.)

Recent investigation goes to show that the number of honey bees kept in our state at the present time is less by several thousand colonies than those that have been handled in former years. This great falling off in so important an industry should be a matter of much concern to us all as honey producers, and should lead us to adopt measures if possible to check its further progress. The losses referred to may be attributed to several causes, that of poor wintering being doubtless the greatest. Perhaps there is no other question that relates to the work of bee-keeping more important or that is more frequently and fully discussed or that has brought out such a wide difference of opinions and experiences as the question we are now to consider. I do not care to discuss at this time all of the theories that others have advanced, nor the claims that have been made for the various methods advocated for the safe wintering of our colonies. On the other hand this brief article is presented simply as a nucleus in the hope that it may draw out inquiries and discussions touching the matters that must be omitted in the paper. It would seem that we have had both time and opportunity during all the past years of our investigation to have determined the relative value of the different methods employed, and to solve some of the difficult things concerning the wintering of our bees as to lead us to determine each one for himself which one of the systems in practice is best suited to his individual surroundings. The injunction "prove all things, hold fast to that which is good" may be aptly applied to our efforts in providing the very best protection for our bees during the most critical period of the year. Proceeding upon this supposition, I may simply give the results of my own plan that I have employed for the past eight years with unvarying success. Being located in the northeastern corner of the state just above the 42d degree of latitude, I have concluded that for me indoor or cellar wintering is preferable to any other method and in the practice of this plan I have endeavored to observe the few conditions that go to make it successful. A fairly strong colony of young bees, an abundance of honey, a dry, quiet, dark place with proper ventilation. These conditions are fairly well met with in a cellar under the dwelling in one end of which are kept the fruit and vegetables, the opposite end being reserved exclusively for the bees. In the passage way between the apartments is placed a screen door to prevent the bees from leaving their own room. The walls of the cellar are constructed of stone and smooth plastered inside, with cement floor, and lathed and plastered above. The ventilation which is not perfect comes from two narrow windows and a door into the hatchway leading to the outside of the cellar. The inside dimension is 11x14 feet and will accommodate 100 colonies of bees. Two 2x4 scantlings are laid about ten inches apart near each wall and also through the center of the room, these to rest the hives on for convenience in handling. This arrangement provides for alleys sufficiently wide to pass in and out between the three rows of hives. The rear end of the hives are elevated an inch by laying an inch thick strip on top of one of the pieces of 2x4 with entrances facing the center of the room. I try to look carefully to the matter of preparing the bees in the yard for wintering by removing the supers early enough so that these colonies that seem to be short of stores may have time to supply themselves before the late honey flow has ceased. Usually about Thanksgiving time they are removed to their winter quarters. The bees are first securely shut in by nailing strips of lath over the entrance of each hive, a steady team is hitched to sleds with side boards of the box removed and is then driven along the rear side of the row of hives and two men proceed to load on from twelve to fifteen stands. This many a team can easily draw and if the ground is fairly smooth the bees will be very little disturbed. Driving to the cellar the hives are carried in and tiered up as closely together as is convenient, four hives high. The cloth covers as well as the regular cover remains on top as when removed from the bee yard. Hive ventilation is provided through the wide entrance of the bottom board the entire width of the hive. The work is now accomplished until the time for returning the bees to their summer stands, except to occasionally regulate the ventilation and temperature of the cellar. This simple method as I have attempted to explain it is the way in which for the past eight years I have wintered my colonies with uniformly good success, the loss in no season exceeding over five per cent of the whole number stored, and to my mind this is to us of the northern part of the state the safest and best system to employ. Last winter was one of the severest that has been experienced in north Iowa for many years, the temperature falling several times as low as 36 degrees outside, while in the cellar for several days it went to 36 above with apparently no serious results so far as the bees were concerned. I may add that while the plan that I have described has always proven highly satisfactory in my own case, I am aware that some of my neighbors who have adopted the cellar method of wintering have not always met with equally good results, especially was this true in the winter of 1911-12 when many lost a large per cent and some all of the bees thus treated.

And so we have frequently seen that the same methods employed by different individuals in nearly the same locality meet with opposite results. But of course there are reasons for these differences which may not always be clearly seen or easily accounted for. My advice to all wherever located is this: If you have followed any special plan of wintering for a series of years with uniformly reasonable success, let that be your settled system and hold to it at least until by careful experimentation, with a few colonies at first, you have become convinced that you have discovered a better way. I mean to say by this that it is not safe to attempt in a wholesale way to follow some method that has proven satisfactory to some bee keeper at a distance far remote from you and whose surroundings may be far different from your own. My observations for many years past have led me then to the final conclusion that at least in our northern latitudes, cellar wintering as a rule is the plan for us to follow, inasmuch as it is attended with smaller losses of bees and a saving of a considerable amount of honey as compared with other methods. Possibly after one has provided himself with the required number of suitable double walled chaff hives, he may be able to winter his bees on their summer stands with less labor and inconvenience than by the plan which necessitates the carrying in and out of cellar wintered colonies and yet I believe that we can each well afford almost any extra expense that will bring about the very best results.

FARMING ON A BUSINESS BASIS.

BY DALLAS N. MC GREW, EMERSON, IA.

(Before the Mills County Farmers' Institute.)

Farming is the base upon which all forms of business stand and is conducted in the least business like way of all business. This is done by owners and renters alike.

Formerly it has been that the farmer could put in his crop, harvest it, and realize a good profit even if his methods were not the best, but now, with the increase in the price of land and of equipment, a profit is not so easily obtained.

Every agricultural paper that we pick up has some article referring to the rapid increase of population and the smaller increase of production. Our population has, in the last ten years, increased 21 per cent, our farm area 4.8 per cent and the production of cereals less than 1 per cent. Dr. Hopkins, of Illinois, at a recent meeting in Chicago, gave figures which showed that the average farm acre is producing less each year and explained why we had not felt a shortage of food stuffs as yet. These figures showed a decrease in exports of corn for 136,000,000 bushels and of wheat for 82,000,000 bushels for the five years previous to 1900. Now even with our increase in production this enormous decrease in exports makes it very evident that the question of feeding the increase of population, thought to be groundless by some, is going to be a real issue before many years. Some people are afraid of an over-production of grain and are of the opinion that prices are going to lower. The figures that I have given certainly indicate that we need have no fear of over-production and on the contrary show that we need to make a change in our system of farming, coming gradually to the situation to be met, rather than waiting to the last moment and then make an abrupt change.

Business men look ahead for several years in conducting their business, some making it such a study that they have no time to give to actual work and leave that part to hired labor. Now if business men can make a success by devoting their whole time to the planning of their business and hiring all the work carried on, why cannot a farmer well afford to spend more time than he does in managing his farm work. Successful farming requires a man who has a mind large enough for doing more than one thing at a time. Farming cannot be considered as a continual routine of sowing and reaping.

The merchant has the average farmer bested in carrying on his work in that he keeps some definite system of accounts. He can, by referring to his books, tell just how his business stands, how much has been his gains and losses for past years and just where they were made. Right here is where his success lies, for he can tell on what line of goods his gains or losses were made and profit by them. Farmers, the same as merchants, make mistakes and if they do not know where these mistakes are, and profit by them, that big slice of profit will be taken off every year.

When a merchant sees that a certain line of goods is being carried by him at a loss, he immediately changes it, and when he is introducing a new line he keeps careful watch to determine its success. Therefore we farmers need to get these business methods at work on the farm, and when we find losses creeping in, get at the causes and remedy them.

For instance, if our cropping system is gradually decreasing the fertility of the soil, we need to find it out and change our methods and work for uniform yields rather than have a decrease.

Grain farmers have found in the last few years that they are rapidly losing out as far as fertility goes for they have been unable to get a good stand of clover. As a consequence they are keeping more live stock and sell only the finished product from the farm.

In selling 100 bushels of corn there is 100 pounds of nitrogen and 17 pounds of phosphorus taken off the farm, while in selling 1,000 pounds of fat cattle only 25 pounds of nitrogen and 7 pounds of phosphorus is removed. These are just a few figures which show the benefit from feeding the grain on the farm. From a fertility standpoint, it wouldn't take a business man long to decide between grain and live stock farming.

The farmer of today has a large capital invested, especially if he is farming his own land, therefore, he, as well as other business men, should have a method of telling just how his work stands.

How many farmers make good interest in their investment? For example take a man who owns 160 acres of Iowa land:

Value of land at $125 per acre	$20,000
Value of live stock on same	1,900
Value of machinery	630
Total capital invested	$22,530

This amount, if placed at interest at 6 per cent would yield annually $1,351.80. Now how many farmers do you think make interest on their money, after taking out pay for their work?

The question is now, how can we apply business methods to the average farm and increase its income. One of the first things to do, is to get the fields and buildings so arranged that the least possible time will be spent in going to the fields and in doing chores. A factory or store is never so arranged that much time is spent by employes in going from one piece of work to another, or in carrying on their work. I know of one farm of eighty acres on which the owner travels three quarters of a mile in going to one field of twelve acres During the season I estimated that he would go to this field twice a day for twenty days, making a total distance traveled of sixty miles. At a rate of three miles per hour he would spend two days each year in going to and from work to this particular field, while by a different arrangement of fields he could eliminate most all of this travel.

I was reading an article in a paper last week in which the writer stated that some men did chores by the mile instead of by the hour. Now while the arrangement of buildings for convenience seems a small trifle, it sometimes makes enough difference that an extra man has to be kept during the winter just to do chores. Of course we say the reason is that we have so much stock to care for, while in reality an arrangement for conveniences, such as piping water and storing feed where it is needed, would make enough difference that one man could easily manage during the winter months.

Another thing which helps to run the farm on a business basis is the farm scales. They are as important to the farmer as the stenographer is to the broker. Most farmers use their scales only during corn husking and occasionally when selling something. They should be used regularly when the farmer is feeding any type of live stock. He of course desires to get the largest gains possible for the least feed consumed; so use the scales. The gain per day is the best recommendation for a ration that we can get. By the use of the scales, tankage for the hogs and cotton seed meal for the fattening steers can be tried out. These supplementary feeds to balance corn in a ration have paid for some people; why not for all. It does not take any exceptional business ability to interpret from daily gain and cost of grain whether the supplementary feeds are paying.

When a business man's expense for advertising brings increased sales, he does not hesitate to advertise, so why need a farmer hesitate to buy supplementary feeds when they give larger and cheaper gains.

Much is said at the present time about the high cost of living, especially with reference to the price of meat. By co-operation farmers can have fresh meat during the summer months the same as in the winter. It isn't necessary for a farmer to sell butcher stuff which will dress out from 60-70 per cent to the local butcher for five cents a pound and then buy it back at from twelve to eighteen cents. Not much business to that, is there? By the farmers organizing beef clubs with a definite number of members, and each member taking his turn to furnish the animal to be slaughtered, much will be done to keep down living expenses. Manufacturers work on co-operative principles. They realize that a man can accomplish more and do it at a cheaper rate when working in connection with other men. In the making of an article, each man employed makes only one part and as a result becomes more efficient than if he made the whole article.

Another item which should receive more attention is that of making use of waste pieces of land. Many farmers have a swampy piece of land which could easily be cultivated by laying a few tile, or else have a corner cut off of a field by a ditch, which could be used for a truck patch instead of growing up in weeds.

One of the biggest losses of fertility on the farm is in the manner of disposing of manure. Some men think that by letting the manure pile rot down, it will save hauling out that much and that what they do haul out will be enough richer in fertilizing elements to make up for the loss in quantity. This is a mistake for whenever you see smoke going up from a manure pile, you may know that fertility is going up into the air. As much as 30 to 80 per cent of the nitrogen in manure is lost by fire fanging.

Cornell Experiment Station conducted experiments with exposing manure to the elements. Piles of manure were stored outside for five months and the following results were obtained:

Average weight of piles at beginning of test	4,000 pounds
Average weight of piles at end of test	1,770 pounds
Value before exposing to the weather	$5.48
Value at the end of test	2.03
Value per ton at beginning of test	2.74
Value per ton at end of test	2.34

To prevent this loss by leaching and fermentation, the manure should either be stored in a pit or else hauled out as fast as made and spread with a spreader. By the use of a spreader, manure can be scattered on a pasture, if no other field is available. A loss of fertility as shown by the above figures surely shows lack of good business methods. How much profit would a packing house realize if they did not utilize the waste? It has been said that the squeal is the only part not used in the slaughtering process. Now if it pays the packing houses to use these otherwise waste products to such a degree, why will it not pay the farmer to be more careful of waste?

Most every farm has about one acre more for dry lots than any use is found for. It isn't necessary to crowd the buildings but there isn't much profit in letting $125 land lay idle, so watch that the buildings and lots do not get spread out too much.

Now in summing up these business principles the question is, "How is the farmer going to know exactly how his efforts are paying?" The answer is, "Keep some definite system of farm accounts and records." It doesn't matter so much what system he has, just so that it covers his business and is plain enough for him to tell at a glance how his financial interests are prospering. Most farmers' farm accounts and records consist of a bank book and trust to their memory for information on how each line of work is paying. As a result, if they have a little more money to their credit in the bank at the end of the year, they know they have made some money. They don't know whether it was from feeding the stock as they did, whether from selling the grain when they did, from the buying of more grain and supplementary feeds and feeding them on the farm, or perhaps from building a silo. The time is past for that kind of managing. Too much money is invested not to know exactly how the work is paying.

A book can be purchased for fifty cents that will do very well for the farm accounts and records. In this an account should be opened for every kind of live stock, every kind of crop grown, the machinery, and for cash. Begin by taking an inventory of the farm, the winter months being the best time, for that is a slack time in work and also the time of year when most of the business is settled up. After taking the inventory, place the amount for each of farm property to its own account, and record to each account during the year every transaction taking place. At the end of the year, take another inventory and it will be easy to tell how the business stands. By keeping a note book the work required by each field could be charged to its crop and thereby the farmer could tell exactly if the crop paid. Some say that this requires too much time to make it practical for the average farmer, but it will not. A few minutes time each day is all that would be necessary during the busy season of the year, as the balancing of accounts could be done in the winter when there was not so much work to be done.

Any one desiring particular information on some system of farm accounts, should send for Farmers' Bulletin No. 511, to the U. S. Department of Agriculture, Division of Publication, Washington, D. C.

As soon as farmers get to planning their work for several years in advance as do the merchants, they can expect more uniform yields and will be building up the soil instead of tearing it down, as does year at a time farming. For example, it takes a man with his business talents at work when it comes to plowing under the second crop of clover. The temptation is to cut it for seed or hay. In reality analysis has shown that when all the clover crop is removed nothing is added to the soil, so business instinct would demand that we plow under the second crop.

The merchant has the traveling salesman to keep him posted on the new lines of goods and in like manner the farmer has the experiment station to keep him posted on all up-to-date practices found to be practical. Every farmer should have his name on the mailing list of his state experiment station and he will receive free all bulletins and circulars issued by the same.

I sincerely believe that a definite system of farm accounts and records will be one of the biggest forces in changing our system of farming for the better. As soon as a farmer sees his efforts laid out before him in pounds, dollars and cents, he will show an interest never before aroused by association, or by reading the best agricultural papers.

ECONOMICAL HOUSEHOLD CONVENIENCES.

BY MRS. W. W. LATTA, LOGAN, IOWA.

(Before the Nineteenth Annual Meeting of the Harrison County Farmers' Institute.)

"The home is the center of the universe, and the mistress is the center of the home."

In her hands are the keys of home happiness. Formerly, the housewife was the head worker in the many home industries. With the help of other members of the family, she spun and wove the fabrics used by the household, made the clothing, boiled the soap, preserved, canned, baked—created out of raw materials the simple necessities of life.

Factories now supply the products of these old time home industries, at far less cost, so that the family of moderate income may now have luxuries which were beyond the means of the rich, fifty years ago.

Great industrial changes have taken place in this 20th century of progress, but only recently have scientists turned their attention to household affairs and we believe that the home maker should be as alert to make progress in her life work as the business or professional man and by lightening the work of that home maker by the installing of household conveniences, she will have more time for the training of her children and for the improving of the home.

Modern machinery is lifting the burden off the farm women's work, and it is a dull woman or girl who will continue to wear away her mind and body with hard work, when the employment of modern conveniences will alleviate the hardest of toil and economy does not mean spending the smallest amount but in getting the largest returns for the money expended.

House keeping ought not be a drudgery, but an inspiring profession, but in the past, it has been almost drudgery for some farmer's wives who have had to do all their own work—washing, ironing, sweeping, dusting, sewing, house cleaning, caring for the poultry, making the butter, canning and preserving the fruit, keeping the children in school, cooking for the family and the extra help, which during the year on the farm means so many extra meals. There are the harvesters, threshers, silo men, painters, carpenters, masons, corn huskers, tilers, sheep shearers, etc., and so on throughout the year, and perhaps in a small house with no conveniences at all. No wonder the girls have been drifting into the cities where the house work has been lightened by modern inventions. Surely it is the duty of the farmer to make his home as convenient and beautiful as it is possible for him to do, to keep those girls to help that overworked mother, who, perhaps, has grown gray ten years before her time.

We hear so much of the lack of society for the young people of the farm, yet the wives and daughters of the farm are to be congratulated that they have abandoned much of the drudgery of former years. They have entered into the spirit of modern progress and are participating in social and public affairs and the farmer's home is brighter on this account. The home life on the farm has been made much more worth the living and I believe the farm women will continue to apply labor savers, to the end that they may have time for other things—the local church, the Woman's Christian Temperance Union, farmers club, a chance to visit the school or call on her neighbors.

To meet these changed conditions, a study of the latest economic developments relating to the home is necessary for all true mothers and help mates.

A knowledge of the laws of health, an understanding of sanitary requirements of the house, the right care of children, both physical and mental, and practice in different household arts are all required before the house wife can be considered mistress of her home.

We intend to advance, we expect to progress, we shall not stagnate, we shall not neglect our mental and spiritual nature in order to keep to old time out of date methods.

Would we think for a moment of going back to the little log house with its fire place and its spinning wheel or the tallow candle and the soap kettle of our grandmothers? Certainly not, and never has the art of house keeping and the sanitation of the home, or the science of cooking received the attention it does now and let us ever be on the alert for whatever is within our means for advancement.

To be sure a farmer can get along without many of the modern conveniences on the farm. He could do without a gasoline engine, manure spreader, grain elevator or hay loader and a number of other labor savers which have been added to the equipment of the progressive farmer, but can you realize a man selling one of these conveniences after he has once used it on his farm and seen its real value? The same is true of the housewife in regard to conveniences for the home.

First of all the house should be a place of rest and comfort as well as the work shop of the home, and should therefore be beautiful and comfortable as well as convenient and ought to be arranged where possible with these ends in view.

Rooms should be well lighted and ventilated and if finished with good oiled woodwork and floors are more easily kept clean. If it is possible to have this home heated with a furnace, all the dust and dirt of the stove are avoided. Many of the modern farm homes have a heating plant as well as lighting plant of some kind, either gas or electricity, either of which are far ahead of the kerosene lamp, both in service and convenience.

The kitchen is perhaps the most important part of the house and time and thought should be given to secure the best results possible from the material at hand.

Ventilation and light are the first things to be thought of and then cleanliness. If the walls can be painted they are quite easy to keep clean as they can be wiped off with a damp cloth if need be.

Hard wood makes the best floors though a linoleum covering is easily cleaned.

By all means have a good sink with a drain and water handy in the kitchen. I really believe for the amount of money invested these two things save more steps for the house keeper than most any other convenience of the kitchen and might be had in every farm home. A hot water supply may be furnished by a special heating apparatus in the cellar, a furnace connection or as is usual in small houses, by a boiler and water front attachment for the range.

Aside from the range a small oil stove will prove to be a convenient article when only a little food is to be cooked and save unnecessary fire in the range. And then comes the fireless cooker, one of the later inventions which is proving to be a very convenient addition to the kitchen. What a comfort on a hot day in summer or on Sunday when the house wife may prepare the dinner in the early morning, place it in the fireless cooker and feel sure that if she goes about her other work or attends the services at the church that when she returns, dinner will be ready to place on the table. No danger of burning anything in a fireless cooker.

A kitchen cabinet of the late designs and with plenty of handily arranged cupboards so that various utensils needed when at work may be reached with as little walking back and forth as possible, are a great help.

Among the many devices for convenience in the kitchen are the bread and cake mixers which give ample returns on the money expended as the primary expenditure is only from 60 cents to $5.00 but which when first put upon the market were received with skepticism—if at all—by most housekeepers.

Nevertheless, it is a well appreciated fact that both have come to stay. Why? Because they do the work more quickly, more surely and more cleanly and are recommended by teachers of domestic science.

An assortment of small utensils and devices which are inexpensive but handy include the various cooking vessels of light material, the double boiler, food grinder, apple corer, dish washers and drainers, scales, tea and coffee percolators, wheel trays, etc.

And the house keeper who makes a close enough study of household machinery to know that new needs arise, will know that new ideas and contrivances for making work easier are constantly being put on the market and will be on the look out for them.

One of the hardest tasks of the housewife in the past was the family washing but which has been wonderfully lightened since the advent of the gasoline engine and electricity, which are used to turn both the machine and wringer. I hope the time will speedily come when the old back-breaking wash board and the hand power machines will be a thing of the past.

A laundry room in the basement or built conveniently near the house will save all the steam and dampness as well as the dirt from the house. The water may be piped to the laundry room as well as to the kitchen and with stationary tubs with drain save all heavy work of carrying the water. With such a laundry room, the horror of the wash day is removed. I recently read of a clothes drainer, a simple inexpensive affair, but a handy device for wash day. It consists of an oval steel frame heavily tinned, to which a wire gird is fastened. Steel wire handles on which there are two hooks are hinged to the ends of the frame. Scalding of the arms is prevented and the tiresome work of holding the clothes on a stick to drain is unnecessary. After the boiling is completed the device is lifted until the hooks catch on the sides of the boiler and allowed to remain until drained and then the carrier with clothes may be lifted out.

After the washing, comes the ironing, such a bug bear in hot weather. There are now on the market two types of ironing machines or mangles. (1) The cold roll machine in which the rollers between which the garments pass are made of wood and are unheated, depending on their weight and pressure to remove wrinkles.

(2) The hot roll machines in which one roll is cold and is covered with a blanket and cloth just as for an ironing board, and the other roll or concave plate is made of smooth iron and is heated. The cold roll revolves against the heated metal plate. This is really the more economical and satisfactory machine although costing a little more. The plate may be heated by gas or gasoline. If power is available the ironing machine may be run by power. The use of one of these machines reduces greatly the time required to iron the usual way.

Garments with gathers and sleeves cannot be ironed to look perfectly smooth and well shaped, but all bed and table linen, towels, handkerchiefs, underwear and kitchen aprons may be done successfully.

A number of other irons are now on the market—some of these are the electric iron, gasoline and denatured alcohol irons, all of which you are probably familiar with.

Another great convenience of the modern farm home is the bath room, which until recently was thought to be a luxury or rather an invention for the city home only, but which in the future will be not a luxury, but a necessity in every home.

The rural resident who visits her city cousin is impressed with the convenience of the bath, lavatory, toilet, hot and cold running water of the city home and the contrast is so broad that she is frequently discontented with country life.

The expense is not so great but what most farmers can afford it, at least it will cost nothing to consult an expert and get an estimate of the expense and the cost is then known to be within or without his circumstances.

Modernizing rural homes will prove a great factor in preventing the migration of country boys and girls to cities.

Another late invention is the vacuum cleaner, which is proving very helpful especially at house cleaning time.

More sanitary too as it draws the dirt out of the carpet or rug instead of stirring it up and allowing to settle again on everything in the house.

If you are fortunate enough to have electric power at hand, fasten it to the cleaner and save some more hard work. I hope the time will come and speedily too, when electricity will be within the reach of all, and let me prophesy a little by saying that it is surely coming and besides lighting the farm buildings will be used for power by both the farmer and his wife to perform by the use of modern inventions, much of the labor formerly done by hand.

On farms where dairy cows are kept the cream separator is in such common use that we hardly think of it as a convenience, but rather as a necessity but its use, and the shipping of cream to a central creamery, has certainly made the task of caring for milk and the making of butter much easier.

It may not be possible for each one of us to have modern homes with all of these conveniences at once, but let's add these appliances just as rapidly as circumstances will allow. Let's not be skeptical and think because our grandmothers got along without that we can do the same and don't think for a minute that by the installing of them that the farmer's wife will have so much spare time, that she will as Geo. K. Holmes says, "go society mad!" I am sure she will use the time profitably to herself and family and the home will be happier if she isn't overworked.

On a visit recently to our great agricultural school at Ames I was very much impressed with the Home Economics department. In such pleasant surroundings, the well arranged kitchens and pantries with everything so white and clean looking, the tastily furnished serving rooms, and the light, airy, conveniently furnished rooms for sewing. I thought surely any girl who is privileged to take a course there could hardly come away without having a love for house work.

This same department through its extension work is doing so much for the mothers as well as the daughters in teaching new methods not only in the culinary department but in sewing, home decorations and household economy and thus placing a dignity on one of the highest of the arts—that of home making.

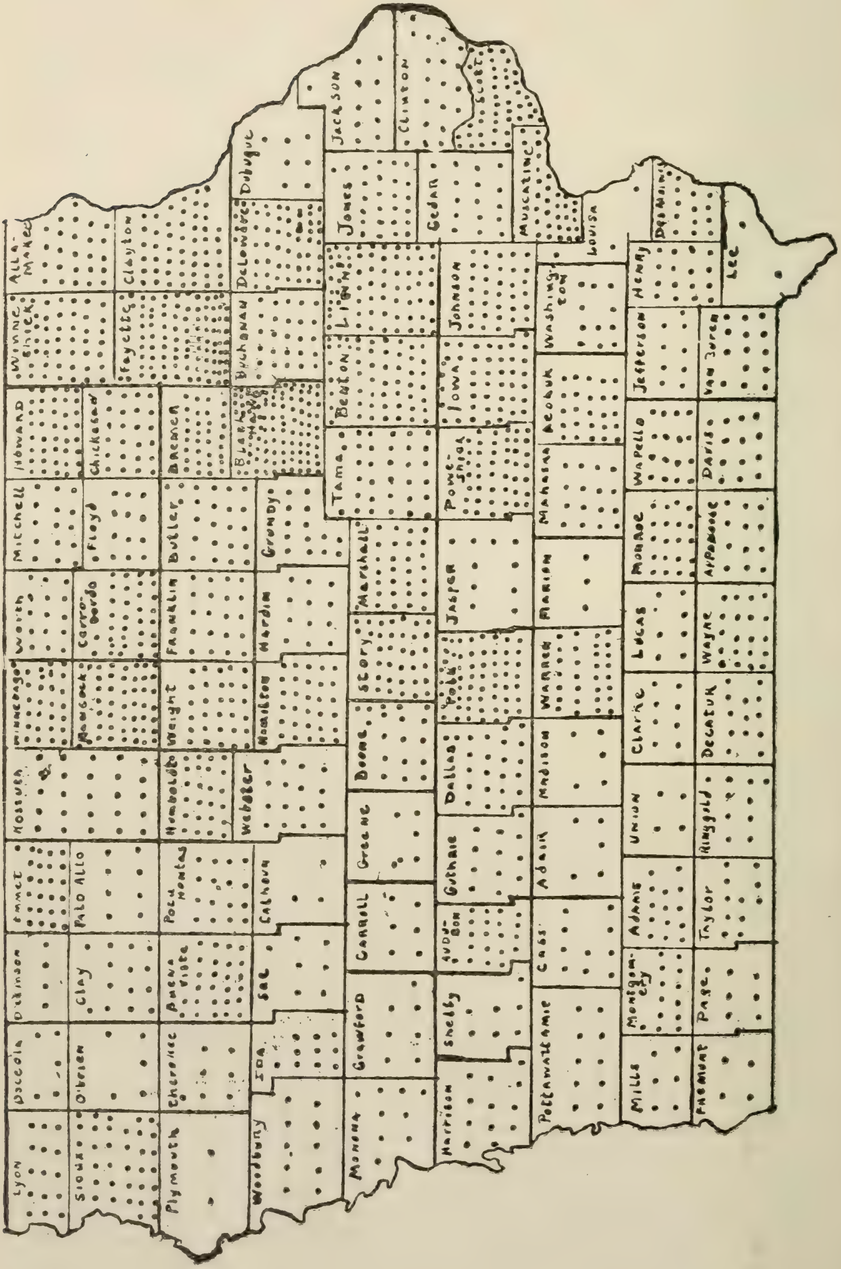
SILOS.

(Wallace's Farmer.)

We now look upon the silo in the same light as we look upon the disk drill and the manure spreader. It is one of the earmarks of the up-to-date farmer. A man is not, as some farmers still think, taking a jump into the dark when he builds a silo. For thirty years past they have been experimented with in this country under all kinds of conditions.

The map which accompanies the article indicates the distribution of silos over the state of Iowa in the year 1911. We are not surprised to note that in northeastern Iowa, where the dairy industry is strongest, silos are the thickest. What is the matter with Lee, Plymouth, Fremont, Union and Dickinson counties, that there should be in them such a small number of silos?

During recent years the silo industry has grown by leaps and bounds. In 1909 there were 1,500 silos in Iowa. By 1910 this number had increased to 2,700 and in 1911 there were 4,000. We now have no doubt but that there are now over 6,000 silos in the state of Iowa To the man who is afraid to make the venture of buying a silo, these figures should be reassuring. But to the agricultural newspaper man, to the extension worker, and to all who are interested in the most economical methods of agricultural production, these figures are a disappointment, for they in-


Lyon
Osceola
Dickinson
Emmet
Kossuth
Winnebago
Worth
Mitchell
Howard
Winneshiek
Allamakee
Sioux
O'Brien
Clay
Palo Alto
Hancock
Cerro Gordo
Floyd
Chickasaw
Fayette
Clayton
Plymouth
Cherokee
Buena Vista
Pocahontas
Humboldt
Wright
Franklin
Butler
Bremer
Buchanan
Delaware
Dubuque
Woodbury
Ida
Sac
Calhoun
Webster
Hamilton
Hardin
Grundy
Black Hawk
Benton
Linn
Jones
Jackson
Monona
Crawford
Carroll
Greene
Boone
Story
Marshall
Tama
Clinton
Harrison
Shelby
Audubon
Guthrie
Dallas
Polk
Jasper
Poweshiek
Iowa
Johnson
Cedar
Scott
Pottawattamie
Cass
Adair
Madison
Warren
Marion
Mahaska
Keokuk
Washington
Muscatine
Louisa
Mills
Montgomery
Adams
Union
Clarke
Lucas
Monroe
Wapello
Jefferson
Henry
Des Moines
Fremont
Page
Taylor
Ringgold
Decatur
Wayne
Appanoose
Davis
Van Buren
Lee

Silos in Iowa in 1911—One dot stands for two silos. (Courtesy Wallace's Farmer) dicate that only one out of every forty farmers in the state of Iowa has a silo. What about the other thirty-nine?

It is about these other thirty-nine that we are now concerned. Not all of them would be justified in buying a silo. Most of them would, and we wish to point out at this time the reasons for, and against, investing in a silo. In the first place we will deal with the nonsensical rumors constantly springing up to hinder the introduction of something new. We are referring to such rumors as: "Silage hurts the teeth." "Silage causes tuberculosis." "Silage is hard on the digestive system." "Silage is poison to horses and sheep." "Silage makes the milk of poor quality." "Silage is hard on the land."

There is not a one of these floating rumors which should hinder any sensible man from building a silo. But there are some other reasons not so generally discussed, which should be considered before a man decides. How much, and what kind of stock have you now, and how much will you have in the future? If you have less, or think that in the near future you will have less than 12,000 pounds of stock to which you can feed silage, we doubt very much if it will pay to put up the silo. If you have more than 15,000 pounds of stock, to which silage can be fed, it almost certainly will pay you to put up a silo. In figuring on a silo, remember that cattle use silage better than any other class of stock. Profitable dairying without a silo is almost impossible. For economic feeding of beef cattle, silage is almost as necessary as for dairy cows. Repeated experiments by the Iowa, Ohio, Indiana and Nebraska experiment stations have proved beyond doubt that under present corn belt conditions, cheaper gains can be put on beef steers with silage as part of the roughage ration than in any other way. In these experiments ten pounds of silage have been found to have the power of replacing about one and one-half pounds of grain and two pounds of hay. Sheep, horses and hogs will eat silage, but do not appreciate it so much as cattle. In the case of sheep and horses, there is danger of feeding spoiled or moldy silage. Brood sows will eat a little silage to advantage, but ordinarily should not be fed any large amount.

The amounts of silage ordinarily eaten daily by the different classes of animals are about as follows:

Dairy cattle, or wintering beef cows	35 lbs.
Fattening steers	20 lbs.
Heifers, calves and bulls	15 to 25 lbs.
Ewes	2 to 4 lbs.
Fattening lambs	1 lb.
Horses	5 to 10 lbs.

We give these figures so that the prespective builder of a silo may determine whether or not he has enough stock on the place to justify the investment. Suppose he finds that he has enough stock to consume an average of 1,000 pounds daily during the six winter months. This is the equivalent of about ninety tons, which would necessitate the erection of a silo fourteen feet wide by thirty feet high. In considering the size, he must be very careful not to build a silo too wide. Hundreds of farmers make this mistake, and find that it is impossible to feed off fast enough to prevent spoiling. Silos too large have in some localities made the silo unpopular, because the farmers using them have not had enough stock to feed off the two to four inches daily that is necessary if silage is to be kept from spoiling. Every man should consider whether or not he wishes to build two silos. On most farms there is a period of 100 days during the late summer and fall when pasture is short and then silage would be of great benefit. Especially is this true on the dairy farm. On the average corn belt farm we consider two silos, one about 14x30 feet, and the other 10x30 feet as ideal. To fill these two takes about fourteen acres of average corn.

Before any man puts up a silo, he should consider the difficulties which are likely to be in the way when it comes to filling. If there are no other silos in the neighborhood, he should try to get his neighbors to go in with him. This will cut down his investment in a silage cutter, however, and distributer, and will make it much easier when it comes to filling in the fall. To fill a silo promptly takes a force of fifteen to twenty men working from one to two days. A powerful engine, preferably one with at least 18-full horsepower, should be used. It may readily be seen that co-operation in siloing pays more than in almost any other farm operation.

We will now assume that our prospective silo builder has considered all the difficulties in the way of filling, and has decided to build. He is undecided as to what kind. He sees the advertisements of wood silos, hollow tile silos, brick silos, and concrete. Some of these claim greater durability than others, while others claim that the silage keeps better. But we do not care to enter into any controversy as to which silo should be put up. So far as we have observed, all of the silos advertised in standard farm papers are good. In the present state of our knowledge we would say that the important thing is to get the silo put up. It does not make so much difference what kind you put up, just so it is done at once. As a rough average, and merely to give our uninformed readers an idea of the price, we would say that the ordinary 14x30 foot silo, fully erected, and with concrete foundation, would cost $300 to $400, the exact price varying greatly according to freight rates, and, in the case of tile and concrete, according to availability of good labor. Properly cared for, a wooden silo should last at least twenty years, and the hollow tile, brick and concrete, if properly put up, should be practically permanent.

Many men make mistakes in feeding silage. They think that because the animals like it so well that it is a "cure-all." They forget that it is poor in muscle building material, and that young animals cannot make large gains on a ration of corn silage, corn and oat straw. They fail to realize that while it increases the milk flow when fed in connection with a good grain ration, that nevertheless it is weak in milk building material. What we wish to impress on the minds of all feeders of silage is that when silage is fed in large amounts it becomes especially necessary to use either clover hay, alfalfa hay, oil meal, cotton-seed meal, or some other feed rich in muscle builder.

Even in the best packed silos there will sometimes be moldy silage. As a rule, this does not seem to hurt cows, but very often causes sheep and horses to become dangerously sick. A careful feeder must do his best by distributing his silage evenly and packing it tightly to prevent mold. If mold occurs, he must take pains that neither his horses nor sheep eat it, and to be on the safe side, he should not feed it to his cattle.

We suspect that there are at least 50,000 farmers in Iowa whom it would pay to put up silos this year. Many of these men know nothing about silos or silage, and it is ridiculous for us to attempt to tell them all about it in one short article. What we want these men to do is carefully to consider the silo. We want them to send to the Iowa Station at Ames, to the Nebraska Station at Lincoln, to the Missouri Station at Columbia, to the Illinois Station at Urbana, to the Wisconsin Station at Madison, and to the United States Department of Agriculture at Washington, D. C., for all the bulletins available on silos and silage. We want them to write the different manufacturers of silos and silo machinery asking for literature. They should ask definitely for the experience of their neighbors. Above all, they should not be needlessly alarmed by the vague rumors which float around the country and which either grossly exaggerate the merits of silage, or give it a very bad name.

CARE OF THE CALF FROM THE FEED LOT TO THE BUTCHER.

BY H. J. HESS.

(Before the Iowa Aberdeen Angus Breeders' Association.)

With such masters of the art of breeding and feeding as Messrs. Escher and Davis, I am sure my work has been well begun. As I am to start with the work of preparing these calves for the butcher at weaning-time, I will take it for granted that they have been taught to eat a grain ration of proper mixture and roughage suited to their needs, while nursing their dams. This important part of the handling of a calf before weaning-time will enable it to keep right on gaining, and it will not experience a set-back at weaning time. The main thing is to keep the calves right on growing, and not allow them to lose the calf-fat. They must have a grain ration that will maintain the same smooth form and mellow flesh, the same coat of hair and fine, loose hide that so nicely covered them at weaning time. To do this requires the careful attention of the feeder. The weaning time comes in the autumn, when conditions are ideal for this work. The golden grain has been harvested and the granaries well filled. The barn has been filled with the new-mown hay. The silo has been filled to the brim. A part of the corn is in the shock, and the remainder of the crop is fast being stored in the cribs. With the crops of a well-managed farm at hand, there is but little need for other feeds, with the exception of a small amount of oil meal. This will largely fill the place of the milk supply that has been cut off, and will help to balance up the other feed. I like to feed calves oats and shelled corn, equal parts, with about a pound of oil meal per head per day, with all the good clover hay they will clean up, giving them the grain three times a day, and all they will eat and clean up in thirty minutes after each feeding time. I do not advise grinding for calves until they have reached the age of twelve months. At this time it may pay to crush the corn, and I have for a good many years prepared corn for feeding cattle that have reached this age by grinding the corn, cob and all, not that the cob is of any particular value as a feed, but it keeps the grain from lying too closely in the stomach, and I believe they will digest and assimilate the corn better if prepared in this manner. The introduction of a small amount of ensilage given each day fresh from the silo will add greatly to the ration and give variety as well. I wish to impress upon those not accustomed to feeding calves that they will not handle any great amount of roughage while so young, and to make calves under twelve months of age do their best, you must not expect them to do the scavenger work of the farm by turning them out to clean up stalk fields, meadows and fence rows. Leave this for the older cattle. The cows from which the calves have been weaned can do this nicely. Provide a well fenced feed lot, with good drainage; give them access to a well ventilated shed or barn. It is not necessary to build expensive barns for this work; all that is needed is something substantial in the way of a building that will house them comfortably in times of storm. Provide the building with plenty of windows, high up on the sides, for light, and large doors opening to the south, and be sure they are always open. A better way would be to provide good, large openings, and leave the doors off entirely. Right here let me call your attention to the water supply. A tank placed in a convenient sheltered place is an important part of the equipment. I like to have this tank drawing its water from a large supply tank, so that the water is always there. Roll a barrel of salt in the feed lot, stake it down so it will not roll, and saw a hole in the staves large enough to admit the heads of the calves in reaching for the salt.

Don't let them want for anything. The wants of your cattle will take dollars out of your pocket.

As these calves reach twelve months of age, we are coming to the spring time, and we are all glad for this, for what is better than to see the trees put forth their green leaves and the fields respond to the falling rain and the warm rays of the sun. At this time, there should be a separation of the heifers from the steers, unless this has been done at weaning time, in case the heifers were to have been retained for breeding purposes. But as these calves were intended for the butcher, it is absolutely necessary to separate them at this time. The heifers have another mission to fulfill, and they become an annoyance in the feed lot which prevents the best of gains, and I believe it is just as well to turn the heifers over to the butcher at from twelve to fourteen months of age. This will give you the advantage of a May or June market, which is usually good. Your heifers, if well cared for, will weigh around 800 pounds, and command nearly the top of the market at this age and weight. I would like to add just a little more in regard to selling these heifers so young. They do not go on and grow beef as do the steers, but tend more to fat-forming instead of muscle-building, and while they will keep on gaining in weight, it is more of a laying on of fat, and they are soon loaded down with a surplus of fat that the butcher does not want and the consumer does not care to buy. This is why fat heifers do not bring as much as steers. To avoid this condition, an early marketing of the heifers is advisable.

We will continue the feeding of the steers, for they will go right on growing more beef, and prime beef. The manner of feeding will have been gradually changed. Instead of giving three feeds of grain a day, as at weaning time, the change will have been made to twice a day, and now to once a day, and this feed to be given in the evening. They have grown in size and can consume a larger amount of roughage, and we find they are consuming more of all kinds of feeds. It is an important matter in feeding young growing steers that they be given an increasing ration to keep up to their rapid development. The grass is now making its appearance in an adjoining pasture, and we will open the pasture gate and let them have a nip of grass. Do not wait until the grass has grown up large, so that they can go out and take on a big fill of grass in a short time. Rather let them have the pasture shortly after the appearance of grass, and let them come with the grass. Now, here is where corn and cob meal comes in so nicely, to help absorb the succulent, juicy grasses. The oats can be omitted; the oil meal can be dropped out of the ration. But keep the hay still in the feed racks, so they can get it at will. Perhaps the supply of ensilage is used up, and it can be discontinued as the grass begins to grow. Through May and June we will make beef rapidly. I have made steers gain three and one-half pounds per day for these months, with nothing but corn, grass and clover hay. With the approaching days of summer we will need to protect these steers from the ravages of the flies and the increasing heat of the day. We will slide all the windows of the shed or barn wide open, and tear open some burlap sacks that contained the oil meal, and tack them over all the openings. Make a blanket of the same material and hang in the doorway, so that when the cattle enter, the blanket will act as a brush on their backs, and whip the flies back. You will find they will spend much of their time through the warm summer months in this well-ventilated shed, and you will be well repaid for your trouble. As the autumn approaches, you will have new corn fresh from the field to gradually take the place of the old. Begin feeding a little new corn by cutting stalk and all while it is yet quite green, and feed it in the pasture in addition to the old corn, and finally, as the new corn ripens, gradually change them over to new corn altogether. Now, to give a nice finish, we will add about two pounds of cottonseed or oil meal per head daily. As Christmas-time approaches, we will have finished our work with this lot of cattle. Christmas-time is the time of the year that the whole world is looking for a good roast of beef or a choice steak, and we will consign these prime bullocks to market, to prepare and distribute to the ever-increasing holiday trade for choice beef.

THE PRACTICAL MANAGEMENT OF A HOG FARM.

BY H. T. MORGAN.

(In the Iowa Homestead.)

Swine raisers have been surfeited with advice as to the manner in which they should conduct their business and it is not the thought of the writer to indulge in any "theories," but rather to present some of the fundamental necessities which must be observed by the successful grower of market hogs. The widely varying conditions under which hogs may be successfully produced make it quite impossible that any general rule can be laid down which will insure a profit under all conditions. There are, however, some basic principles which must be observed by every producer in order to insure even a moderate degree of success. The practical management of a hog farm demands constant watchfulness, and attention to the minor details of the business is the price of success.

One of the most successful growers of market hogs in the country lives in northern Illinois, and has been raising market hogs for fifty-three years. This man says: "The primary qualification for the successful management of a hog farm is 'hog sense,' and no man should attempt to make a specialty of pig-raising unless he likes hogs." "Luck" may be helpful at times, but "knowing how" will pay dividends regularly. This man raises but one crop of pigs each year from his sows, having found by experience that fall pigs for market purposes cannot be successfully raised or profitably grown in his latitude. During the fifty odd years that this man has been growing hogs in large numbers, and with cholera rampant in his neighborhood many times during that period, his escape from the ravages of disease all those years cannot be attributed wholly to "luck." While many growers raise two crops of pigs each year, it must be conceded that in the section of the country lying north of the 42d parallel, the profits derived from fall farrowed pigs will be very much below the average profits from spring farrowed pigs. The record of the annual food production of the hog is incomplete. We have a record of the commercial hog, but the value of the millions that are slaughtered on the farm, together with the kill in the small towns and small packing plants cannot even be approximated. The figures available are interesting and convincing of the vast importance of the yearly pork crop of the country.

There are a number of states that grow hogs by the million and are not rated as pork-producing states in a commercial sense, and the by-product left on the farm in the shape of manure must be credited to the hog. During the forty-six years that the present Union Stock Yards have been in operation, Chicago has received 275,000,000 hogs. The record of the greatest one-year production of hogs in the United States was in 1908. The receipts at thirteen principal markets for that year reached the enormous total of 31,778,717 hogs. This is the best possible statistical demonstration of the immensity of the swine industry. Add to the number received at the above thirteen markets, the millions that were sold at the thousands of smaller markets, and the hogs slaughtered for home consumption on the thousands of farms of the United States and it will be seen that the "humble hog" occupies a most prominent place in the very foundation of our agricultural system, and that as a creator of new wealth, at least in the corn-producing states, the American hog leads the list of domestic animals. Mr. J. Ogden Armour recently said: "Without the contribution of the American hog to the food supply, a semi-famine of meats would be created, and if I were asked to enumerate the great calamities possible to the human race, I would place the extinction of the American hog well at the top of the list." A comparison of the growth of the swine industry expressed in monetary values is found in the fact that the market value of the commercial hog crop in 1873-4, at all points reporting, was $75,000,000 in round figures, while that of the killing year ending March 1, 1911, was $424,328,000, the high prices of that year offsetting diminished production. During thirty-seven years, from 1873 to 1910, the commercial hog crop of the country sold for approximately seven billion dollars. An almost incredible amount of wealth has been accumulated in the principal hog-growing states during the past half century by hog production. An illustration of this is afforded by the statement of an Iowa banker that two-thirds of deposits of nearly one million dollars in his institution was hog money, and the same factor created much of the accumulation of the two other banks of his town. "I make this statement advisedly," he added, "because hog buyers pay for their purchases with checks which are promptly deposited. Cattle feeders must deduct from their gross sales the original cost of the feeders, but money realized for hogs represents newly created wealth, and each year this production process is repeated."

The hog is legatee to some very serious diseases and probably nature has designed them as a restraint to overproduction. It must be admitted that as repressive measures these diseases are highly successful. A large percentage of the mortality among hogs is due to overcrowding, and failure to provide abundant quarters with proper ventilation is bound to invite reprisals in the shape of an outbreak of cholera, or some other virulent disease. It is a law of nature that overcrowding increases mortality and this law applies equally to all living things. That crowding the farm is to invite disease may be questioned by some, but I submit that in years when the pig crop is light, cholera is seldom in evidence and, for the same reason, a high-priced pig crop is usually a healthy one.

The necessity for selecting a well-drained location for the hog plant is recognized by all practical growers. Dampness is sure death to young pigs and adult hogs soon become unthrifty if confined in perpetually damp quarters, and for this reason hog houses of cement construction are seldom found satisfactory. Sunshine, ventilation and exercise are three essentials in hog growing that are most frequently overlooked. A Wisconsin breeder once said: "I raise my hogs on sunshine, pure air and enough other food to make up a balanced ration." I know of no better method of raising healthy hogs. It has been observed that hogs seem to thrive best on a sandy or gravelly soil. This sort of land affords the best of drainage, and sanitation becomes less a problem. Soils of this character are nearly always suited to the growth of clover or other leguminous plants and profitable hog production is likely to depend largely upon the quality and extent of your pastures. Any farm that is adapted to hog raising should grow practically all the grain and roughage essential to the welfare of the pig. Packers do not discriminate as to breed, and market prices are governed by the condition of the animal rather than by the breed he represents.

Generally speaking, the hog to grow is the breed you like best. All the standard breeds of swine are so well established that there seems to be but little difference in their feeding qualities. It is a fact, however, that certain breeds are especially adapted to certain conditions, and in localities where a breed has become popularized, it is best to stick to that breed. Community interests are strengthened by breeding stock of a uniform kind. One of the most extensive stock breeders and feeders in Illinois once related to me how he came to adopt a certain breed of hogs and commence raising pure breds after having for many years raised grades. This feeder usually fed several hundred steers each year and as a rule would have about two hogs to each steer in the feed lots. These hogs were of all breeds and crosses as most of them were bought from the neighboring farmers. Here is the story: "A few years ago I had about one hundred steers on feed with around 200 hogs and pigs following. Among these hogs were several sows with litters, and two of these sows happened to be pure-bred Berkshires with large litters of pigs, six or eight weeks old. Early one morning I was awakened by a man who drove into the yard to tell me that my steers and hogs had broken out and could be found several miles down the road. I immediately started after them and in the first mile or two I passed a number of my hogs. When I overtook the main body of cattle fully four miles from home I was greatly surprised to see the two Berkshire sows with all their pigs close up to the cattle and industriously working over the droppings from the steers. As these were the only Berkshires I owned and as they were the only hogs that followed the cattle more than two miles, I was very much impressed by such a display of vigor and 'industry' and I at once determined thereafter to keep only pure-bred Berkshires on my farm." I may add that since that time, this man has sold upwards of $40,000 worth of Berkshires from his farm in one year, and now owns one of the most noted herds of the breed in the world.

The producer who grows hogs for the market should use only pure-bred sires and while, of course, pure-bred sows are the more desirable, one can by intelligent care in selecting breeding sows from among the grades, establish a profitable and uniform breeding herd. To be on the safe side the grower of market hogs should change boars each year, or at all events, avoid in-breeding. It is unwise to use immature boars, and under no circumstances should much dependence be placed on boars under twelve to fifteen months of age. Too many farmers use boars of eight or nine months and frequent disappointments are the result. While an eight-months-old boar may be used with safety on three or four sows, to attempt to breed upwards of ten to twenty sows to a boar under one year old is bound to result disastrously. In the selection of gilts to be used as breeders one should pick those that incline somewhat to coarseness rather than one which is fine of bone and inclined to compactness of form. As a rule, the coarser type will be far more satisfactory in that they will produce larger litters and possess the ability to raise them. The brood sow should have good width between the eyes, great depth, a broad, level, or slightly arched back and large bones of good quality. "Quality in the bone is indicated by the absence of unduly large and loose joints. Never select for a breeding animal one which shows a droop immediately back of the shoulder, as such weakness is a sure indication of a lack of vitality. Never retain a poor mother and do not send a good one to market so long as she will produce and raise a good litter. The hog farm's capital is the breeding herd, and an average of nine or ten pigs to the litter should be raised, and a herd that will do that will pay good dividends. A competent hog grower should mature 90 per cent of all the pigs farrowed, and while I am well aware that but few men accomplish this, it can be done Too little attention is paid to the sow before, and immediately after farrowing, and right here is found the reason why so few growers succeed in maturing over 75 per cent of the pigs farrowed."

Three points which should be considered by all breeders as most vitally affecting economy of production are: prolificacy, quality and size. The fecundity, or prolificacy of the hog should be encouraged and cultivated by careful selection and proper care and feed. No other meat-producing animal, aside from poultry, is capable of producing so large a number of young in a year as is the hog. The brood sow that will raise eight to ten pigs to a litter is more than twice as valuable as the sow that will raise but four or five to a litter. If the sow that raises but four or five pigs to a litter will pay expenses, the sow that will raise twice this number is obviously a money maker and deserving of the best of care.

While "quality" is a thing rather difficult to describe, it is recognized by the producer as a valuable asset, as it means greater profit from the herd. Buyers are always ready to pay a substantial premium for quality and the markets have never yet been overrun with an oversupply of high-class hogs. The size of a hog is a point that is but seldom given the consideration it deserves. In general, the market demands favor a hog weighing from 180 to 225 pounds. Incidentally, these weights usually represent the most economical weights to produce. With these weights in mind, it is often claimed that it is not necessary to keep breeding animals weighing 500 to 700 pounds. This, however, is a superficial viewpoint, for, while the packer does not demand these heavyweights, size in the breeding stock is necessary in order that the pig may have inherited size which makes for early growth. Large mature weights are essential for its rapid growth during the first nine months of the pig's life. The more nearly maturity is approached, the more expensive are the gains produced and consequently the larger the breeding stock the earlier will be the age at which the hog will reach a desirable market weight and the more economical will be the gains. On the other hand, the hog that cannot be put on the market until it reaches maturity is not a desirable animal to raise, for the hog, as a rule, does not reach maturity until about two years of age. During the past thirty years the matter of early maturity in hogs has been receiving much attention at the hands of breeders and this point has been greatly developed in certain breeds. In the case of at least two of the breeds, this early maturing characteristic has been developed to a point beyond a profitable stage. Most of the established breeds are of such character, however, that pigs may be put into desirable market condition at almost any age during their early life, but the trouble in the case of the two exceptions above noted is that they mature too early to admit of the most profitable growth.

In view of the above facts, it is obvious that for the most economical production of pork, the time at which the hog comes to maturity should be extended as far as may be consistent with the best form and quality.

The successful hog grower watches the market and aims to supply the weights most in demand, and while it sometimes occurs that heavy hogs are in demand at a premium, it is but seldom that other than weights around 210 pounds are in most urgent demand. The head of one of the large packing plants at Chicago recently stated the fact that in late years the quality of the hogs received at Chicago had depreciated and gave as a reason that more hogs were being shipped off grass. While the grass-fed hog will not dress out as profitably as one that has been fed (or at least finished) on corn, it is indeed gratifying to observe that the corn-belt farmer is waking up to the economic necessity of growing his hogs on grass. The packer referred to also stated that of recent years, tankage has found a broad and increasing demand from hog raisers who realize its protein value as a balance for the heavy corn ration fed to many hogs, especially those that are fattened in the winter.

The strongest emphasis is laid upon the necessity of growing hogs on grass and clover. If alfalfa is available, the problem of early and profitable growth is solved. Summarizing the experience of successful hog farmers I would enumerate the following rules which, while not inflexible, will be found applicable to almost all localities and conditions where profitable production of hogs may be carried on: First, careful and intelligent selection of the breeding stock with a view of fixing the characteristics of prolificacy and size; proper care of the sow during the period of gestation and at farrowing, and with special care for at least two weeks after farrowing; forcing both breeding stock and pigs to take abundant exercise at all seasons; abundance of grass and especially clover and the limited use of corn until the finishing period; avoid so far as possible the use of gilts in the breeding herd and never breed them to farrow a first litter under fifteen months of age. The difference in weight between the litter of a gilt and a litter from a three-year-old sow will average twenty pounds per pig at the age of five months, in favor of the pigs form the mature sow; avoid inbreeding and to be on the safe side, change boars each year; keep a good mother so long as she is serviceable; house the herd comfortably; keep the bedding dry and thoroughly ventilate the sleeping quarters. A hog will stand a low temperature if kept dry and supplied with pure air; supply at all times an abundance of pure water and in winter warm it to about 50 degrees F. Keep vermin away, and this means both on the outside and the inside of the hog. Do not use a dipping tank. A spray is fully as efficient, costs much less, requires but little to thoroughly spray the animal, and obviates the danger which attends the use of a dipping tank. Crude oil is the most effective remedy for exterminating the external parasites which infest the hog and it is also the most economical to use, if applied with a spray. If crude oil is sprayed about the pens and sleeping quarters occasionally it will not be difficult to keep these pests in subjection. Cleanliness is essential to the profitable growing of hogs and supporting parasites is unprofitable.

While hog farming offers an inviting field—probably never was the outlook so bright for continued high prices—I would advise against any man's undertaking to establish such a business unless he has available land for pasture or is so situated as to be able to grow soiling crops for hog forage throughout the growing season. Of equal importance is the necessity for having perfect drainage, and by all means remember, "Success cannot attend the enterprise unless you have a liking for the hog."

It is in the United States that the porcine species has acquired his greatest importance and reached his highest development and it is in the corn belt that he thrives as in no other country in the world.

A SOIL SURVEY IS NEEDED IN IOWA.

W. H. STEVENSON IN FARMER & BREEDER.

I am glad to take this opportunity to explain to the readers of Farmer and Breeder just what constitutes a Soil Survey, and to point out how such a survey should help every farmer in the state with the solution of his soil problems, however difficult they may appear to be at first.

Ten or twelve years ago, a soil survey was a new line of work. Few if any, agricultural experiment stations at that time were making surveys, even to a limited extent. The Bureau of Soils of the Department of Agriculture, was doing some excellent pioneer work. At the present a goodly number of states, through their respective experiment stations, are carrying on detail soil surveys. This work has proved to be of such fundamental value to agriculture and is looked upon with such favor by farmers and business men alike, that it is not strange that there is now a widespread and popular demand for the introduction or extension of soil surveys in nearly all the states of the Middle West.

A detail soil survey of any given area, for instance a county, consists essentially of indicating on a map the location and extent of the different soil types, and in giving the total plant food content of these types. A soil type is an area of land within the boundaries of which the soil possesses more or less definite characteristics. Among these may be listed the following: (1) the geological origin of the soil; (2) the lay of the land; (3) the depth and character of the various strata or zones of soil, namely the surface, subsurface, and subsoil; (4) the physical or mechanical composition of the soil in these different strata, as the percentages of clay, silt, sand, and gravel which they contain; (5) the texture, plasticity, granulation, porosity, etc.; (6) the color of the strata; (7) the drainage; (8) agricultural value, based upon the power of the soil to produce crops; (9) native vegetation; and (10) content of plant food and the presence or absence of acids or other detrimental constituents.

In the case of an accurate soil survey, the exact location of every road, stream and railroad, is determined by the surveyors and recorded on a map. Each section of land, or square mile, is divided into forty-acre plots on the map before work in the field is started, and then each ten-acre tract is inspected by the surveyor for the purpose of determining the type or types of soil composing it. When this has been done the different types are indicated on the map by different colors. Some excellent colored soil survey maps have been recently published by the Illinois Experiment Station in their Soil Reports Nos. 1 to 3 inclusive, and many good maps showing less detail are to be found in the annual reports of the Bureau of Soils.

When the soil survey of a given county is completed, the map shows all the soil types in the county and the exact area which each type covers. It shows the part of the county wherein the more common types of soil are found and also the location of any peat, gumbo, sand or gravel, as well as the areas which are rough and broken and those which are especially adapted to any particular crop. Because of these facts, a survey is of great practical value to the man who desires definite knowledge regarding general cropping conditions or the fitness of a certain area or soil type for a given crop. The latter point is nicely illustrated in the production of sugar beets in Bremer county, Iowa. The growing of this crop in that section of the state for a period of five years or more, has shown that beet growing is much more profitable on certain soil types than on others; in fact that the business is not successful on some of the more sandy types. Clearly it is important that the owners of these Bremer county soils or that prospective settlers who may desire to grow beets, should know the exact location of the "beet" soils. The survey now in progress in that county will determine the exact acreage and location of each soil type, and thus the "beet" lands can easily be found by anyone who will consult the soil map which will be published later by the Iowa Experiment Station and the Bureau of Soils.

This is only one illustration of hundreds, or even thousands, that might be given to show the practical helpfulness of a knowledge of soil types and of their location based on a detail survey.

While the field work of a survey is in progress, many samples of soil representing each type are collected, in order that physical and chemical analyses may be made. The physical analysis fixes the exact per cent of clay, silt, sand, gravel, and stone in each type. These data aid the surveyor to determine definitely the texture of the soil, and also the difference in textural conditions between the surface stratum and the underlying subsoil. Facts of this character often have an important bearing upon drainage problems, and also upon the adaptation of soils to particular crops.

The chemical analysis gives the total supply of plant food in each soil type and the organic matter content of each type, but the rate of liberation is governed by many factors, some of which may be controlled by the farmer while others are for the most part beyond his control. We thus see that a soil survey gives an accurate invoice of the plant food actually present in the different soil strata (samples for analyses are usually taken to a depth of 40 inches and represent three strata; namely the surface, subsurface, and subsoil).

The facts stated above show that a soil survey, when completed, furnishes information concerning: (1) The location and area of the different soil types; (2) the physical or mechanical composition of the soil; and (3) the total supply of plant food in each type of soil.

The statement has been made that the facts secured by a soil survey are often helpful from the standpoint of the adaptation of soils to crops, drainage problems, etc. This is true, but we must not lose sight of the fact that a survey is primarily valuable because it shows what our soil problems are, where they exist, and the extent of country affected.

This means, of course, that additional soil studies must be undertaken, if these problems are to be solved successfully. This point deserves emphasis. We are certain that it would be a grave mistake for any state or federal agency to base its soil studies in the field wholly upon a soil survey. This is true, because a landowner can not get even approximately the full measure of benefit from a survey unless the facts contained therein are interpreted in terms of his local soil problems. For instance, a survey report indicates on the map that 60 per cent of a farmer's land is brown silt loam, and the remaining 40 per cent is black clay loam. Of what value is this information? The farmer has probably determined from observation that certain crops commonly grown in the locality, do better on one type than on the other, or that a certain system of soil management already in general use seems to be especially adapted to one of these soil types, but not to the other. The chances are that these observations, based on purely local conditions, would have been made had no survey been carried on.

The point of vital importance to the farmer is this: Are the crops which I am growing the most profitable for the types of soil on my farm; are my rotations and my systems of soil management of such a character as to enable me to secure maximum crop yields?

Now a soil survey does not answer these questions, nor solve the problems involved; it merely indicates the problems and suggests certain lines of investigations for the different types of soil. Again, the soil survey report carries the information that the brown silt loam, for instance, which is found in the county as indicated on the map, contains per acre in the surface soil, let us say, 3,000 pounds total nitrogen, 700 pounds total phosphorus, and 24,000 pounds total potassium. What use can the farmer make of these data? It must be confessed that they will not help him very much with his fertility problems unless they are correlated with data from some field experiments.

However, if a soil survey is followed by a series of field experiments to determine crop adaptations, suitable rotations, and the absolute needs of the various types of soils for different fertilizing materials, such as manure, limestone, phosphorus, etc., then the survey and the field experiments supplement each other and each is made a potent factor for soil improvement. The survey indicates a probable shortage of some essential plant food constituent, the presence of acid, or the existence of some unfavorable physical condition of the soil. The field investigations, based in part at least on the indications of the survey, are carried on in such a way as to prove, if possible, that certain methods of soil management or the application of one or more fertilizers will increase crop yields and tend to build up the productive capacity of the soil.

A combination of soil studies of this kind can not fail to bring together a fund of knowledge regarding the soils of a given area which will practically revolutionize the soil management practises of that area, if the land-owners are alive to the opportunities which are opened up for them. If there be any doubt regarding this point, let it be remembered that Illinois agriculture can produce many instances of sections where entirely new methods of soil management are now in vogue, because of the combined influence of the soil survey and field investigations, the purpose of which were to determine the fertilizer requirements of the soils.

Iowa is a great agricultural state; her climate, soils, and position with reference to markets, all tend to make the production of farm crops within her borders a profitable business. But even now, after a half century of cropping, many Iowa soils are going back in productive capacity, and they will continue to go back even more rapidly unless better methods of soil management are adopted. In our judgment, there are no factors which will count for as much in this direction as a state-wide detail soil survey, and the installation and maintenance of a group of soil experiment fields scattered over the state in such a way as to have at least one station on each of the principal types of soil. The Iowa Experiment Station is ready, and even anxious, to carry on both of these lines of work. Will the farmers of Iowa urge the legislature to make the necessary appropriation for the work? If they do this, there will soon be under way in our state a helpful series of soil studies. If they do not ask for financial support for this work, Iowa must continue to lag behind most of the other states in the Mississippi Valley so far as soils investigations are concerned.

REPORT OF THE ANNUAL MEETING OF THE IOWA BEEF PRODUCERS' ASSOCIATION, HELD AT DES MOINES, JAN. 29, 1913.

Crops marketed on the hoof as beef cattle bring larger profits than when marketed directly as grain and hay. That was the first reason why more beef cattle should be grown in Iowa, urged by the speakers at the annual meeting of the Iowa Beef Producers' Association, held at Des Moines, Jan. 29, 1913.

The next big factor in favor of beef production rather than grain farming for Iowa farms was that less fertility is sold from the farm when crops are marketed as live stock products rather than sold through the elevator.

There was a three billion bushel corn crop produced in the United States last year and Iowa grew more than her share of this, but there was less beef produced in Iowa in 1912 than in 1911. The supply of live stock is less at the beginning of 1913 than at the start of 1912 said President Escher in his address at the evening meeting of the Association.

"There is no danger of overproduction of beef in Iowa. It will require at least seven years at the very least for the United States to get back to her normal supply of beef cattle, and by that time the population will have increased another ten millions."

Live stock farming was upheld as the highest type of agriculture as well as the best paying one. Half of the farms of the state should be producing some beef either as a straight baby beef proposition or in connection with some milking. It is Mr. Escher's opinion that a carload of baby beeves from each of 100,000 Iowa farms each year would not mean overproduction for the state. Pacific coast markets are taking and will continue to take a large share of Western beef as fast as it is produced. Eastern markets must be supplied largely from the corn belt states. Iowa should produce at least her share of this. What Iowa needs to increase profits in farming, make farm life more attractive and farmers more contented, and to keep up the fertility of the Iowa farm is more of the "Old Cow."

Prof. W. J. Kennedy pointed out that from both the steer feeder's and the beef eater's standpoint the situation is alarming. With a total beef cattle supply estimated at 35,000,000 head against better than 50,000,000 head twelve years ago, accompanied by a 20,000,000 increase in population in the United States, it is small wonder that feeding cattle and beefsteak are both high.

Two methods of beef production were outlined by Prof. Kennedy, who talked on "Producing Beef on $250.00 Land." First was the straight baby beef method where the calves are allowed to follow their mothers on pasture, with some grain after the first two months are past. These calves are pushed as rapidly as possible and sold when weighing around 1,000 to 1,100 pounds at from fifteen to eighteen months of age. The other method of beef production recommended is where beef and milk are produced together from cows of some ability in both directions. The cows are milked and the calves are grown to yearlings on skim milk or possibly two calves are allowed to suck one cow.

The finishing process takes longer and the calves do not reach market till from twenty-four to thirty months of age, weighing from 1,200 to 1,300 pounds or better. Either method was shown to be sufficiently profitable to net six per cent on $250.00 land if present prices could be secured for cattle. Nor does Prof. Kennedy look for lower prices.

Rex Beresford, specialist for the Association, corroborated the statements of Prof. Kennedy by showing that twenty-four Iowa farmers had produced baby beef during the last year at a profit on high priced land and with high priced feeds. Eight hundred sixteen of these calves were grown by these men during 1911 to fourteen and one-half months of age, and marketed weighing 832 pounds at $8.30 a cwt. or $69.00 a head. The average cost of producing these calves on the high priced feeds of 1911 was $62.00, leaving a profit of $7.00 a head.

It was also shown that live stock farms are, on the whole, more productive than grain farms and that the average stock farm is more productive than is the farm devoted exclusively to grain production. The average yields of ten beef cattle farms in Iowa were compared with the yields for the same years on grain farms in the same neighborhoods. It was found that for a five year period the cattle farms averaged fourteen bushels more corn per acre than did the grain farms. Other crop yields were very nearly in proportion.

A short talk on the importance of the beef cattle industry and of the organization of cattle breeder in the state was made by President R. A. Pearson of the Agricultural College.

At the afternoon session the following officers were elected, to serve for the year 1913:

President, Charles Escher, Jr., Botna, Iowa; Vice President, Cyrus Tow, Norway, Iowa; Secretary, George H. Burge, Mount Vernon, Iowa; Treasurer, C. H. Hechtner, Chariton, Iowa; Membership Secretary, A. R. Leffler, Bentonsport, Iowa.

Board of Directors: W. B. Seeley, Mt. Pleasant, Iowa; Fred McCulloch, Hartwick, Iowa; Ira McVicker, Eagle Grove, Iowa; D. McArthur, Mason City, Iowa; W. W. Vaughn, Marion, Iowa; Ralph Sherman, Grinnell, Iowa; John Shambaugh, Booneville, Iowa; C. W. Huntley, Chariton, Iowa; C. W. Hunt, Logan, Iowa; Charles Russell, Carroll, Iowa; R. W. Cassady, Whiting, Iowa.

WHAT CAN IOWA DO TO RELIEVE THE BEEF SHORTAGE?

An address delivered at the annual meeting of the Iowa Beef Producers' Association, January 29, 1913.

BY HON. CHAS. ESCHER, JR., BOTNA, IOWA.

President of the Iowa Beef Producers' Association.

The year just closed has been a remarkable year. The volume of our crops was never so great. The United States harvested her first three billion bushel corn crop. Other grains have been harvested in about like proportions. There is a general abundance except in live stock production. That the supply of live stock for 1913 will aggregate less than the supply for 1912 is the consensus of opinion by those capable and in a position to judge. That it will require seven years before the United States can again get back to producing her normal supply of cattle is also predicted by one who is regarded as a keen calculator. And by that time our population will have increased another ten million, proving that the shortage will continue and become greater as time goes on. Big crops are always principal factors in the general prosperity of an agricultural people. The wheels of commerce are oiled by the hand that feeds the cow and holds the plow. When the farmer is prosperous, it stimulates the nation, but when an agricultural people begin to neglect live stock production, sooner or later, poverty will knock at the door. The population of the United States has doubled every twenty-five years since 1685. During the past twelve years our population of the United States has increased 25% while our supply of beef cattle has decreased more than 30%. These figures do not indicate any immediate relief. Next year and each succeeding year for the next decade to come will see decreasing receipts in live stock markets. Whom among you will doubt the vital importance of this organization. Iowa is the greatest of all the agricultural states in the Union, because of her fertile fields. Iowa has been famous as a cattle feeding state, and if Iowa continues to hold her station in agriculture she must get back into live stock production. Agriculture has been called the wheel of commerce, and in my estimation, stock raising is the main spoke in this great agricultural wheel. Being imbued with a natural love for the old cow and having foreseen a beef cattle shortage coming, I decided to secure aid for the encouragement of beef production in Iowa, and in the Thirty-fourth General Assembly, we were successful in securing an appropriation for $7,500 to promote the beef cattle industry in Iowa. Beef production will, and of necessity must, become an Iowa industry. With it will come more silos, more permanent blue grass pastures, more alfalfa and clover, less soil robbing, and more conservation of the fertility of our soils. The result will be less acres of farming with increased yields of forage and grains, a more prosperous people, and an increased awakening of love for the farm. A prosperous people is most usually a contented people. If the farmer does well, he naturally loves his occupation. Prosperity will, in most cases, solve the question of making the farm more attractive. Beef production is a topic widely discussed nowadays, and Iowa must of necessity send out her influence for good or evil. Will you lend a helping hand?

There are over 200,000 quarter section farms in Iowa. At least half of these ought to be producing some sort of beef. This would give us 100,000 farmers in the entire state, engaged in beef production. Assuming that these farmers have farms averaging 160 acres each, each farmer engaged in the production of beef could easily keep enough cows to produce a car load of baby beef, (twenty head to the car). If each of these farmers would market this car load of baby beef, there would be 20,000 head in each county or 2,000,000 produced on the farms in the state of Iowa. If these cattle were fed out as baby beef, they would weigh from 1,000 to 1,200 pounds at eighteen to twenty-four months of age, and at present prices, which will be a conservative price for an estimate, they would net close to $100 per head, or about $2,000 per car for each farmer thus engaged. This would mean a net income for each county of about $2,000,000 or a grand total of $200,000,000 for beef production in Iowa alone. This would only utilize half the farms, the other half could engage in dairying, truck farming or exclusive grain farming.

To be prosperous we must market our crops via the live stock route, thus keeping the fertility on our farms. It has been said that the United States was capable of feeding the world, but the problem now confronting us is, whether or not we can, in years to come, feed our own millions. He who produces two blades of grass, or two pounds of beef, where formerly but one grew, is a benefactor to humanity. Conservation is a prime factor of importance today. Beef production is a matter of special interest, and important to all the farmers in the Corn Belt states. We have learned how to raise the crops best adapted to our soils and climate, but we have not learned that we must return to our land a part of what we take out. The right manner of producing beef is particularly adapted to the maintenance of our soil fertility. Each farm produces a large amount of roughage, for which there is not, nor ever will be any profitable market, but with the beef herd, you can profitably use it all. The beef business is of special interest just now, for we are entering a period that will be known as the period of restoration of beef production; and I think most farmers now see that we must restore beef cattle on our farms. It is all important that in this work of restoration of beef, we adopt the best and most economical methods, so that in years to come, we may not again find ourselves engaged in an unprofitable business. The silo has come to stay and the time will come when silos are as common as corn cribs on our Iowa farms. It is only by the use of silos and better and more permanent blue grass pastures that beef production on Iowa farms will be a profitable business; and then I would advise only the production of the best class of beef. I would not advise anybody attempting anything short of it on our high priced lands. It is not a question of fattening cattle but the growing of beef that we are most especially interested in. Corn belt farmers must awaken to the fact that if they expect to handle cattle, they must breed them. The Pacific Coast will grab the major portion of our range-bred cattle from now on and they must and will have them—hence if we wish to produce beef we must raise our own feeders.

THE BEEF CATTLE SITUATION AND ITS SOLUTION.

BY W. J. KENNEDY.

Director Extension Department, Iowa State College, Ames, Iowa.

Why are beefsteaks and beef cattle so high as compared with six, ten or fifteen years ago? Will twenty-five cent oats and thirty-five cent corn bring the price of beef down to its former level? These are some of the questions which people in every walk of life are asking at the present time.

In a measure, at least, this question can be answered by the application of the law of supply and demand. During the last twelve years our population has increased 25 per cent while our supply of beef cattle has decreased over 30 per cent. These figures would not indicate any very immediate relief to the consumer. The end is not yet. Next year and each succeeding year for at least three years will see a much shorter supply of beef cattle than at the present time. This will be due to the fact that the present high prices for beef cattle are causing thousands upon thousands of cows and heifers to be sent to the slaughter house, which under ordinary circumstances would and should be retained for breeding purposes. It is a case of killing the goose that lays the golden egg.

The ranges of the West, the Northwest and the Southwest, which in the past constituted the greatest feeder cattle producing territory in the world, have seen their best days. They are carrying today just about one-half the number of cattle they did five years ago. Irrigation, "dry farming," and the more general introduction of sheep have driven a large number of the range cattle men out of the business. Even the corn belt states have fallen off from 25 to 50 per cent in beef cattle during the last ten years.

In the past Iowa has been famous as a cattle feeding state. True we have had some "beef producers" but the vast majority of our farmers have been cattle feeders. From now on conditions will gradually change. Beef production will become a more important industry in Iowa. With this will come more silos, more bluegrass pastures, a largely increased acreage of alfalfa, less soil robbing and a more permanent form of agriculture.

By cattle feeding we mean the fattening of more or less mature steers for the market. These cattle may be home grown or may be produced on the ranges of the Northwest, the West or the Southwest. In the past the majority of such cattle have come from the range and remained on the Iowa farm from four to twelve months, or long enough to make them marketable beef.

The problem which now confronts the old time cattle feeder is the source of his supply of feeders. In former years the range produced an abundance of feeder cattle. This supply has fallen off rapidly and there is little prospect of increased supply. This means that the cattle feeder as we knew him in the past must give way in a measure to the beef producer.

Beef production is an important question of the day. Iowa needs on the average 1,000 beef producers in each county. Each man to market about eighteen or twenty good 1,000 to 1,200 pound fat animals each year at from $85 to $100 per head, making a grand total of from $175,000,000 to $200,000,000 worth of beef each year. This would leave 1,000 farmers in the state for the dairy business. It would mean the marketing of our crops in the form of meat and dairy products and would prove a wonderful aid to the conservation of our soil. It would mean one or more silos on each farm—hence the utilization of the corn stalks now wasted. We would then be on a par with the good farmers of England and Scotland, and our land would be paying dividends on a from $200 to $300 per acre valuation.

By "beef production" we mean the growing and finishing of our own cattle for market. This requires skill and good management to insure success. Haphazard methods of breeding and feeding have no place on the farm of the "beef producer." Good beef sires of the early maturing kind are demanded. Corn silage, alfalfa, clover and other palatable forms of roughage will be fed in conjunction with corn, cotton seed meal, oil meal or other nitrogenous concentrates.

Beef production may be carried on at a profit on the Iowa farm, either as a straight baby beef proposition or as a beef and milk combination. By the selection of grade beef cows with a tendency toward milk production, milking them and rearing the calves on skim milk and grain adjuncts it is not difficult to make it a paying proposition. The butter made will provide for the keep of the cow and at the same time leave a balance on the right side of the ledger. The calves reared on skim milk and grain should weigh around 700 pounds at twelve months of age and would cost at the outside $30. These animals can be put on the market at around twenty-four months of age weighing from 1,200 to 1,300 pounds and show good profit for all feed consumed. If the man wishes to milk cows this method is the one recommended as one that is bringing success to many engaged in the business.

If labor is scarce and no dairying is desired why, the baby beef method is the one to follow. As good a grade of beef cows as can be obtained, mated with a good pure bred beef sire of some one of the beef breeds will produce calves suitable for making into baby beef. These calves, dropped in the spring are allowed to follow the cows during the summer and fed some grain besides, either in creeps or in troughs in separate pens. When weaned they are gotten on full feed of grain, such as corn and oats with some oil meal or cotton seed meal, and roughage in which clover or alfalfa and corn silage plays the largest part. The calves are made to weigh around 1,000 to 1,150 pounds at from fifteen to eighteen months of age and where right methods of feeding have been practiced, and good stock has been used they can be counted on for a reasonable profit even on land worth from $200 to $300 per acre. This method of beef production demands less labor, but rather more judgment in the selection of sires and the feeding of the calves, because the payment of all feed bills and profits must come from the animals marketed for beef.

ALFALFA MANAGEMENT IN IOWA.

(Bulletin No. 137, Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic Arts.)

SUMMARY.

1. Though the total acreage of alfalfa in Iowa is still comparatively small, it is being grown with considerable success in all parts of the state.
2. Considering every acre of alfalfa in the state, the average yield in 1909 was 2.85 tons per acre and in 1910 it was 2.7 tons.
3. The average money value of the product of each acre of alfalfa in 1909 and '10, was $22.80, and $31.32 as compared with a value of $16.75 and $15.91 for winter wheat and $17.65 and $14.32 for corn.
4. After deducting the cost of growing each crop, the profit from the average acre of alfalfa in 1909 to 1910 was $14.01, as compared with a net profit of but $3.17 for corn and $4.33 for winter wheat.
5. Alfalfa surpasses all our other farm crops in feeding value. Each acre of alfalfa has averaged a production of 2.6 times as much protein as red clover; 2.75 times as much as corn and 4 times as much as oats.
6. As a pasture for hogs, alfalfa has shown a greater profit than any other crop.
7. Alfalfa is one of the best crops we can grow, as an aid in the maintenance of soil fertility, each acre adding to the farm each year, over twice as much nitrogen and organic matter as red clover.
8. Alfalfa seedings in Iowa have been maintained for over twenty years and on one field the alfalfa has persisted for over thirty-five years.
9. Of 1,016 alfalfa seedings reported from every part of the state, only 12.7 per cent were classed as failures.

10. Alfalfa is being grown most successfully on the Missouri Loess and Moraine soils. The greatest number of failures are reported from the Iowa drift and southern Iowa Loess areas.

11. Sixteen seedings made at Ames since 1904 have given an average yield of 4.38 tons of field cured hay per acre. These yields indicate the returns which may be expected from alfalfa on an average Iowa soil when the best cultural methods are used.

12. It is useless to attempt to grow alfalfa on land which is not thoroughly well drained.

13. While good stands and yields of alfalfa have been secured on fertile soils without the aid of manure, yet these yields are in almost every case largely increased by its use. On soils only medium in fertility, manure is essential to the greatest success, and on soils below the average successful stands are practically never secured without its liberal use.

14. No one can afford to court failure by not inoculating the soil in seeding alfalfa. While many fairly successful fields have been secured without inoculating the soil, yet trials in every section of the state indicate that a more vigorous growth and greater yield is secured when the field is inoculated.

15. On most of our soils an application of lime has been shown to be very beneficial and in some cases essential to the successful growing of alfalfa.

16. The surest method of securing a stand of alfalfa is to seed in the middle of August on summer fallowed land.

17. On many of our soils alfalfa may be seeded with success in the spring, putting the alfalfa in with a small grain crop. This method has the advantage of greatly reducing the cost of seeding.

18. To keep the alfalfa free from blue grass, the field should be cultivated once or twice each year. For this work the spring-tooth harrow is especially desirable.

19. Alfalfa hay can be cured as easily as red clover hay.

20. Seed of the common American alfalfa, produced on non-irrigated fields, preferably in Dakota, Montana or Nebraska, is recommended in preference to other varieties.

21. The original seeding should be small until the best method of handling the crop on the particular soil in question is known.

FOREWORD.

In presenting this bulletin, we wish to acknowledge indebtedness for much practical information received from Iowa farmers who have grown alfalfa, many of them for a long time. A great deal of very valuable information on many other crop problems may be gathered from this same source. Moreover, the sooner these scattered bits of information can be collected, pieced together and presented in connection with other information from other sources, the sooner we will be able to handle our farms more successfully.

Much is still to be learned regarding the best methods of handling alfalfa and the best treatments for various Iowa soils, but with the large

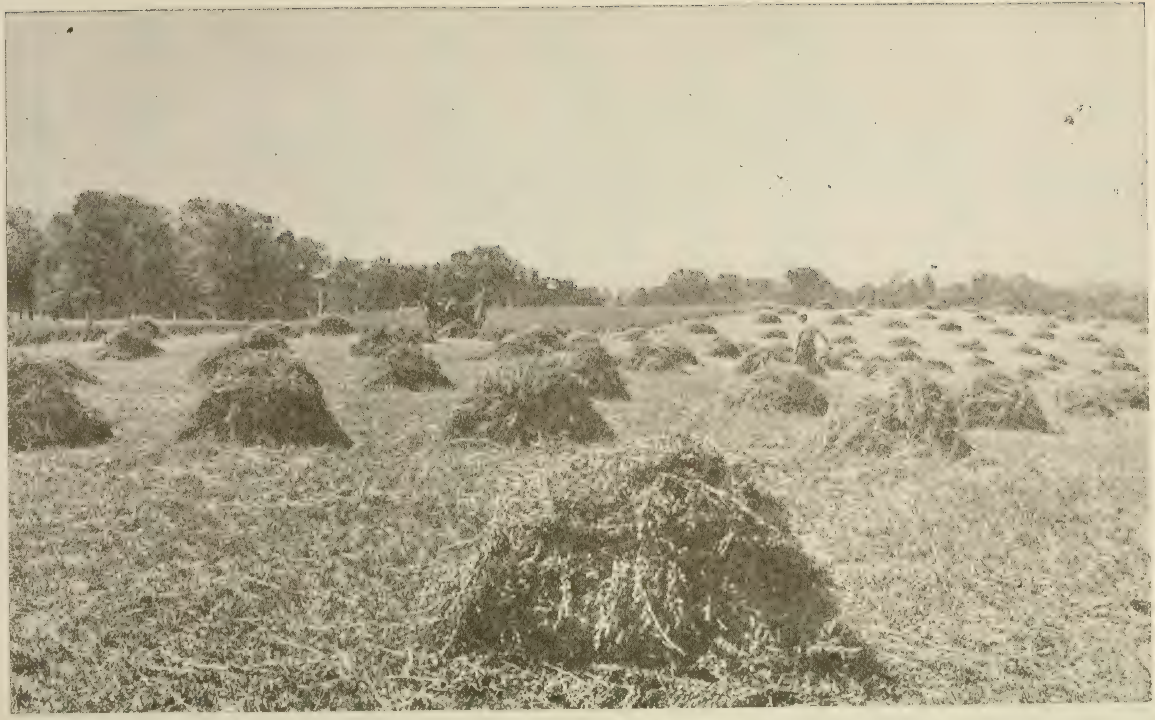


Fig. 1.—An alfalfa field on the college farm. This 7½ acres, seeded in August, 1908, yielded 5½ tons per acre in 1909, and again in 1910. In spite of the very severe drouth of 1911, three cuttings made 4.3 tons per acre.

number of seedings in prospect for the next few years, much of this needed information will soon be at hand.

This study of alfalfa has impressed us more and more with its value and with the wonderful possibilities in its more general growth and use.

Many men may fail in their first attempts to grow alfalfa, and some fail repeatedly. It cannot be expected that this crop can be grown successfully by everyone and under all conditions, or without thought or care. It is a crop requiring study, and therefore we recommend that the planter keep his acreage small until he has acquired such first-hand information about the needs of alfalfa under his particular soil and climatic conditions that he is prepared to grow it on a large area.

The writer is constantly reminded of the fact that ten years ago in his own old home community, a dairy region, the first seeding of alfalfa was still to be made; perhaps the first in the county. It was considered very questionable whether alfalfa could be grown at all, and merely because it never had been grown. Now alfalfa fields are found all through that region—probably on the majority of the farms—and the crop is seeded and used in the regular rotations as red clover would be. This in spite of the fact that on these same farms, on these same soils, and under the same conditions, it had become increasingly difficult, if not seemingly impossible, to secure successful seedings of that old stand-by legume, red clover.

Considering these facts, this alfalfa bulletin is presented with the hope that it may aid in hastening the much more general use throughout Iowa of a valuable farm crop.

H. D. HUGHES.

Alfalfa is not grown as generally in Iowa as its value warrants. During the past few years, interest in the crop has increased until we now have something like 30,000 acres of it in the state, but its merit calls for a much larger acreage. Alfalfa can be grown successfully on nearly all Iowa soils. Furthermore, when measured by the four factors which determine the value of a crop in any locality, alfalfa must be considered favorably. These are:

1. The success with which it can be grown.
2. Yield per acre and money value of the product.
3. Food value for consumption on the farm.
4. Value as a soil builder.

ALFALFA SUCCEEDS IN IOWA.

If proper methods are followed, alfalfa can be grown successfully on nearly all Iowa soils. This fact has been established by the experience of individual farmers and by many special tests conducted under many and varied conditions in co-operation with the Iowa Agricultural Experiment Station.

That some initial attempts have failed should discourage no one since the per cent of failures with alfalfa is not so great as with many other crops which are better known, the red clover, for example.

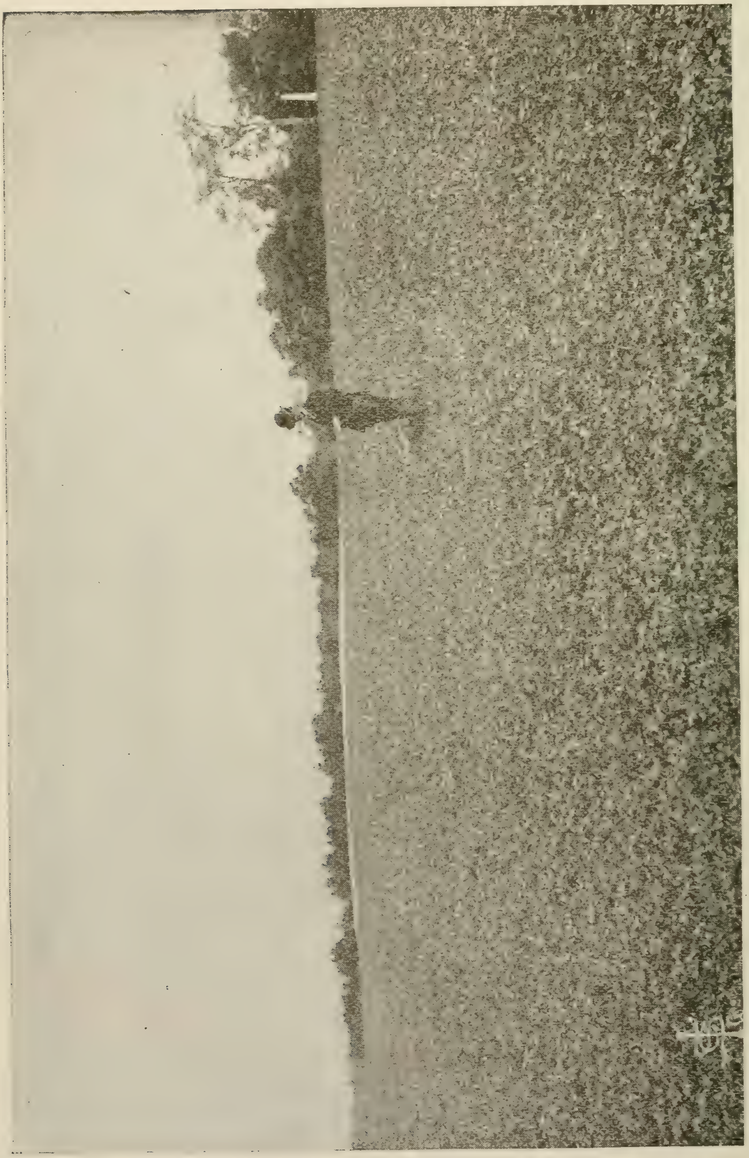


Fig. 2.—A perfect August seeding on the Experiment Station fields. This plot yielded 7.24 tons of hay per acre in 1906.

Undoubtedly, its comparatively small acreage is due to the common belief that alfalfa is not well adapted to Iowa's climatic and soil conditions, and does not fit well into Iowa rotations. The fact is that on most Iowa soils alfalfa can be seeded successfully in very much the same manner as red clover and the following year give a yield practically twice as great. True, the expense of the alfalfa seed will be a little more, but the increased yield of hay and its increased value, pound for pound, over red clover, makes the cost of seed a small item. Farmers in different parts of the state who have grown alfalfa for a number of years say that it is easier to get a stand of alfalfa than of red clover.

YIELD PER ACRE AND VALUE OF THE PRODUCT.

Alfalfa is capable of returning greater profit, acre for acre, than any other crop which can be generally grown on Iowa farms.

Those who consider corn and wheat the only sure money crops for the state, and doubt the adaptability and value of alfalfa may think this a radical statement, but the available data gives it support.

The figures in tables I, II and III show that the average acre yield of all the alfalfa in the state, when sold for the very low price of $9.80 per ton, will pay 10 per cent interest on $270 land.

TABLE I.

The Average Yield and Farm Value of Alfalfa as Compared with Other Staple Crops in Iowa.

Crop	Yield per Acre	Value per Unit	Value per Acre
1909			
Alfalfa	2.85 Tons	$8.00	$22.80
Tame Hay	1.4 Tons	7.00	9.80
Winter Wheat	18.2 Bus.	.92	16.75
Corn	34.6 Bus.	.51	17.65
1910			
Alfalfa	2.7 Tons	11.60	31.32
Tame Hay	1.1 Tons	10.15	11.16
Winter Wheat	18.5 Bus.	.86	15.91
Corn	39.8 Bus.	.36	14.32

TABLE II.

The Net Profit Per Acre from Alfalfa as Compared with Other Staple Crops.

Crop	*Cost per Acre of Growing and Harvesting	Value of the Crop per Acre 09-10	Net Profit per Acre
Alfalfa	$13.05[1]	$27.06	$14.01
Tame Hay	10.30[2]	10.48	.18
Winter Wheat	12.00	16.33	4.33
Corn	12.81	15.98	3.17

*Cost includes such items as interest on value of land, taxes, manuring, plowing, cultivation, seed, harvesting, etc.

[1] Left down five years.

[2] Left down two years.

TABLE III.

Interest Return on Land Seeded to Alfalfa and Other Staple Crops, Considering the Average Yields for the State in 1909 and 1910.

Crop	Value of land on Which Crop will Pay 10 per cent Interest	Per cent Interest Returned on $200 per Acre Land
Alfalfa	270.60	13.5
Tame Hay	104.80	5.2
Winter Wheat	163.30	8.2
Corn	159.80	7.8

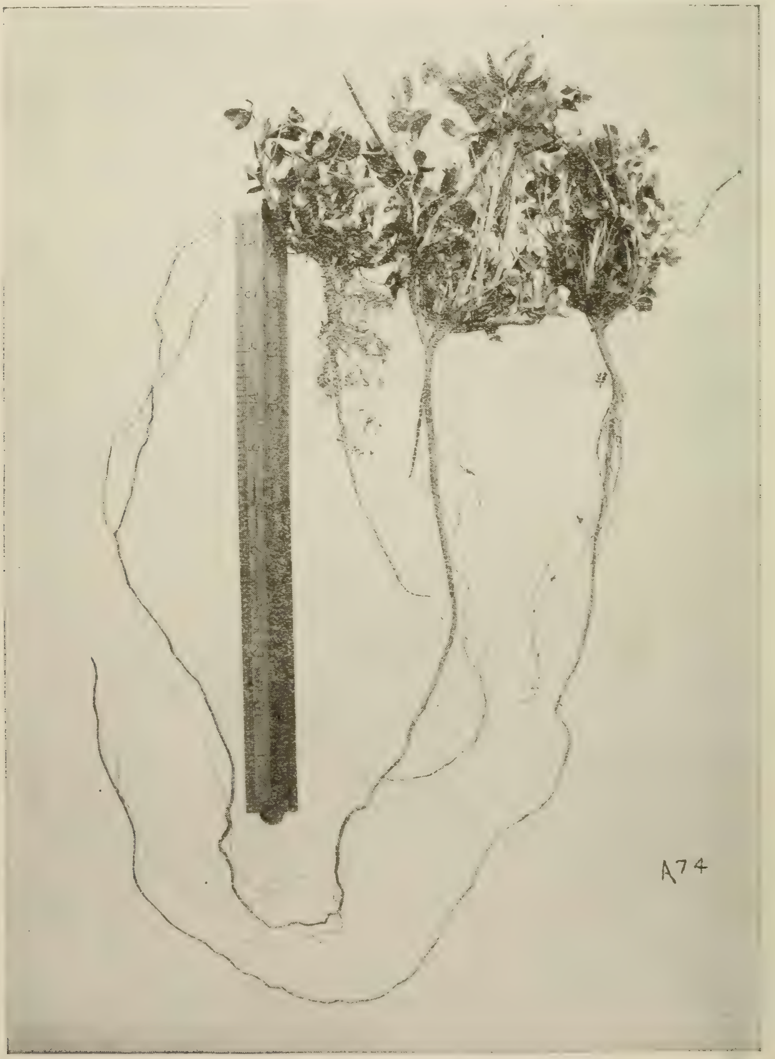


Fig. 3.—The long tap root of the alfalfa plant makes it possible to get a stand of alfalfa in seasons when red clover seedings are lost from "burning" just after the nurse crop is removed, or from dry weather either early or late in the summer.

One hundred and twenty-eight practical men from all sections of the state report an average yield of 3.5 tons per acre, while some report over 5 tons per acre as an average of several years. One man conducting a co-operative alfalfa experiment with this department reports over 4 tons of well-cured hay per acre, for the first cutting of 1912. Two tons of this sold as weighed from the field for $20.00 per ton.

An indication of the possible production of this crop is given in the yields secured at Ames upon land of only average fertility. The soil was inoculated, but it received no fertilizer other than from 8 to 10 tons of manure per acre which was plowed under before seeding.

A field of 7½ acres seeded in August, 1908, on the Iowa State College dairy farm gave three cuttings in 1909 and again in 1910, with a total yield of over 5½ tons each year. In 1910 it also gave considerable pasturage. In 1911 the first crop was cut June 12th, with an average yield of 2¾ tons per acre for the whole piece. Three cuttings were made during the season, and in spite of the very light rainfall, the total yield was 4.3 tons per acre. The first cutting in 1912 gave a yield of 2.95 tons per acre, while 7.03 tons per acre were secured during the season.

Sixteen seedings made on the experiment station field since the year 1903 have produced an average yield of 4.38 tons per acre. Yields of over 2½ tons at a single cutting have been quite common and over 3¼ tons have been secured. One seeding yielded 7¼ tons per acre in a single year, while another has an average for three years of 5¼ tons.

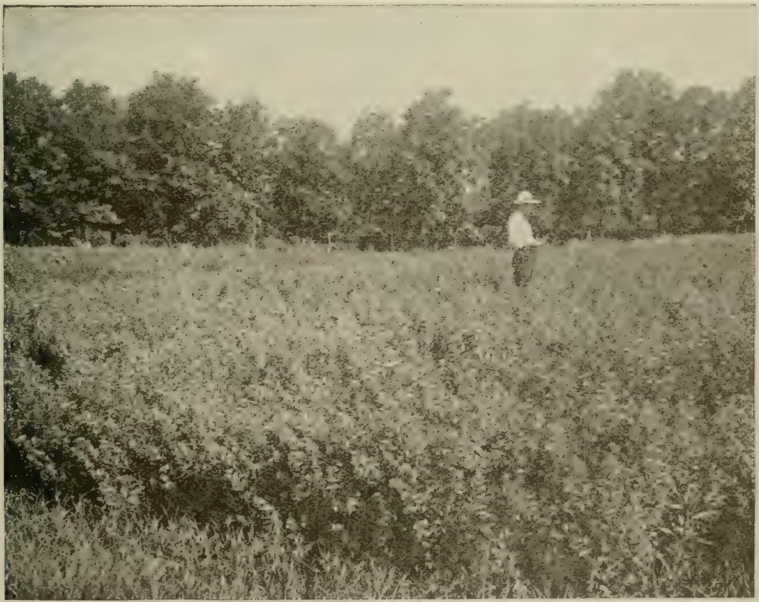


Fig. 4.—Alfalfa sown on Experiment Station fields, August, 1908, on soil only medium in fertility, which received no special treatment except soil inoculation. Yield for 1909, 1910 and 1911, 5 tons, 4.4 tons and 3.2 tons, respectively. Gradual decrease in yield due more to character of season than to decrease in vigor of crop.

Fig. 5.—Extensive tests show that alfalfa is the best of all pastures for hogs. Photograph shows portion of six-acre field on farm of A. M. Avery, Mason City, Iowa, which will be used for this purpose. This field was seeded in late summer, a perfect stand being secured without a weed in sight.

FEED VALUE.

Alfalfa has a very high feeding value, either as hay or pasture. It has a relatively high content of digestible protein.

All crops other than the legumes contain a relatively high per cent of carbohydrates and a relatively low per cent of protein—the stuff feeders are forced to buy as concentrates to balance rations. Alfalfa, on the contrary, has a relatively high per cent of protein and is easily digested, qualities that cannot be overestimated.

TABLE IV.

The Average Composition of Alfalfa as Compared with Other Farm Crops*.

Crop	Water	Ash	Crude Protein	Crude Fiber	Nitrogen Free Extract	Fat
Alfalfa	8.1	8.8	14.6	28.9	37.4	2.1
Red Clover	15.3	6.2	12.3	24.8	38.1	3.3
Timothy	13.2	4.4	5.9	29.0	45.0	2.5
Corn	10.6	1.5	10.3	2.2	70.4	5.0
Oats	10.4	3.2	11.4	10.8	59.4	4.8
Corn Stover	40.5	3.4	3.8	19.7	31.5	1.1
Oat Straw	9.2	5.1	4.0	37.0	42.4	2.3

*Compiled from Henry's "Feeds and Feeding."

Alfalfa hay is especially valuable to the dairyman, though it is also known to give excellent results with all classes of live stock. It is especially valuable where a rapid development of muscle and bone is essential, as with brood sows, young pigs and steers.

TABLE V.

The Food Value per Average Acre of Alfalfa and Other Crops, Based on the Average Composition and the Average Yield for the State for 1909 and 1910.

Crop	Ash	Crude Protein	Crude Fiber	Nitrogen Free Extract	Fat
Alfalfa	488	808	1600	2070	116
Red Clover*	155	307	620	952	82
Timothy*	110	147	722	112	62
Corn Total	102	293	456	2119	127
Grain	31	215	458	1464	104
Stover	70	79	411	655	23
Oats Total	135	195	852	1450	94
Grain	32	114	109	598	48
Stover	102	80	743	852	46

*Assuming yield to be that given for "Tame Hay."

Considering the average yield of various crops for those years in which alfalfa data are available in Iowa, alfalfa produced 5.5 times as much protein per acre as timothy, 4 times as much as oats, 2.75 times as much as corn, and 2.6 times as much as red clover.

As a pasture for hogs, the animal husbandry section of the Iowa Agricultural Experiment station reports a net profit of $184.92 per acre from alfalfa, the hogs selling at 6 cents and the corn fed costing 49 cents for 56 lbs. of grain on the cob. And this when an acre of blue grass handled in the same way gave a profit of but $97.23.

TABLE VI.

Showing the Average Per Cent Digestibility of Alfalfa as Compared with Other Crops*.

Crop	Dry Matter	Protein	Crude Fiber	Nitrogen Free Fat	Extract
Alfalfa	62	72	47	72	43
Red Clover	57	58	54	64	55
Timothy	55	48	50	62	50
Corn	91	76	58	93	86
Oats	70	77	31	77	89
Corn Stover	57	36	64	59	67
Oat Straw	48	33	54	46	36

*Henry's "Feeds and Feeding."

VALUE AS A SOIL BUILDER.

As a soil builder, it is estimated that an acre of alfalfa adds annually over twice as much nitrogen to the land as the average acre of red clover.

This phase of alfalfa growing will not be overlooked, nor its importance underestimated by those who realize the need of giving much greater attention to maintaining the fertility of Iowa soils.

Not only does this plant add greatly to the available nitrogen in the soils, but it adds also to the available mineral fertility, through its power to

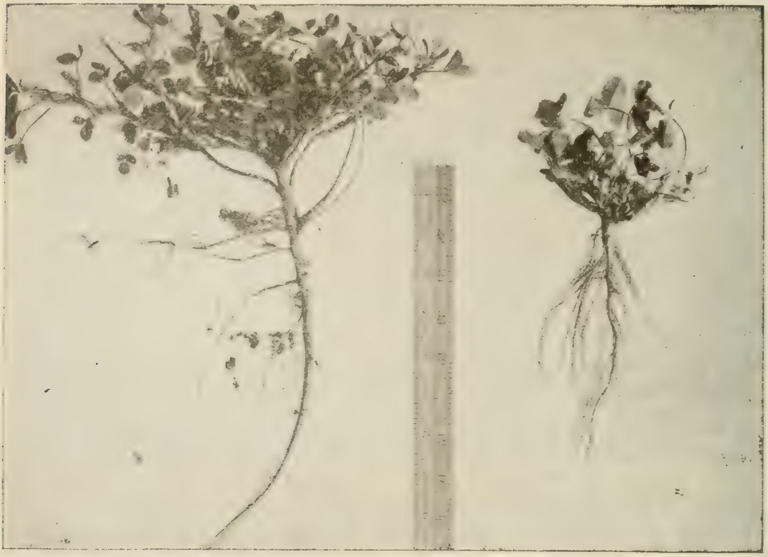


Fig. 6.—A comparison of the root growth of the young alfalfa and young clover plants.

appropriate for its own growth, the large supply of phosphorus and potassium found in the sub-soils. These elements are beyond the reach of the other farm crops in the rotation, but the long alfalfa roots gather them and later on much of this potassium and phosphorus become available to other crops through the manure made from feeding the alfalfa hay. Moreover, as these deep penetrating roots decay, they open channels which will be followed by the roots of subsequent crops which otherwise would never tap these lower regions of the sub-soil. The great amount of organic matter left when the alfalfa is plowed, leaves the soil in the very best physical condition for the following crops, thereby increasing their yields.

HISTORY OF ALFALFA GROWING

Alfalfa dates back many years before the Christian era. It probably had its origin in the valleys of Media, located in western Asia. Gradually spreading westward, it had reached Persia by 500 B. C. and Greece by 470 B. C. It was used very largely as a forage crop for army horses, and its wide distribution was probably due to the Graeco-Persian wars. From Greece alfalfa gradually spread to Italy, then to Spain, France, Germany and England.

The Arabs called this great forage plant "alsacfatsh," which means "best kind of fodder." Later the Spanish name "alfalfa" came into more general use, though in many parts of Europe the plant is called "lucerne," supposedly after a river valley in northern Italy.

In the United States alfalfa's history is rather brief. Lucerne was introduced into New York about 1620 where it made but a partial suc-

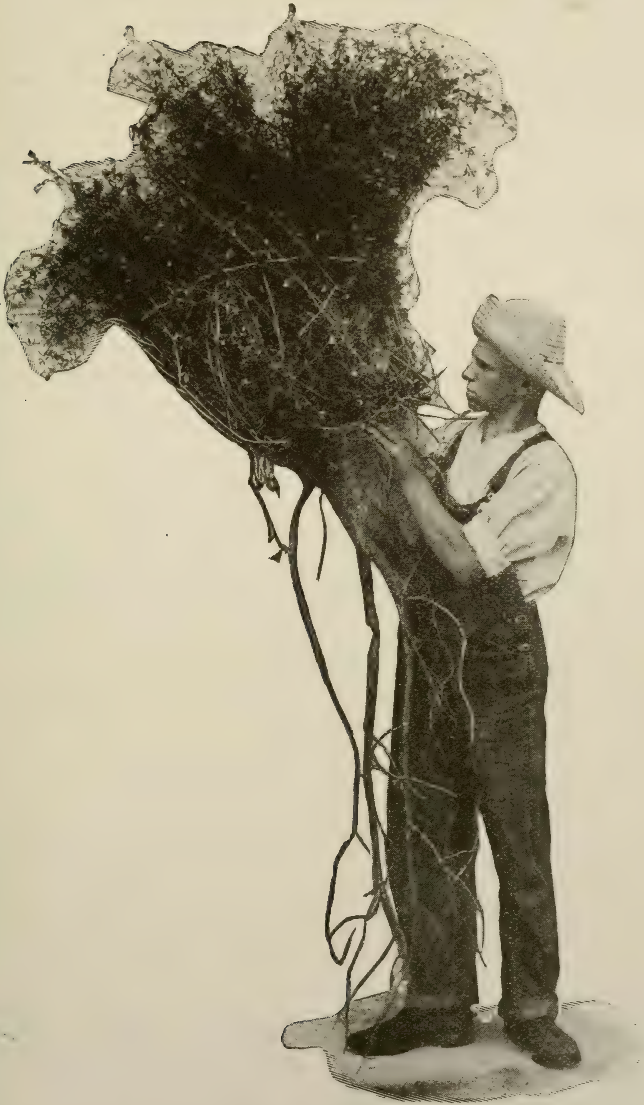


Fig. 7.—An old alfalfa plant at Ames, Iowa, which shows strong root system that secures water and plant food far below the soil area occupied by the roots of most of our farm crops.

cess likely because little was known of its habit of growth or of the best way of handling the crop. Later it is recorded that both Washington and Jefferson grew this forage crop on their own farms. During the Spanish invasion alfalfa was carried into Mexico and then northward into Texas and California. Here again it seems to have been neglected and it remained for the Americans ultimately to develop this wonderful plant.

BROUGHT INTO CALIFORNIA FROM CHILI.

This happened soon after the California gold discoveries in 1848. Some of the gold hunters who made the trip to California by water around South America, stopped by the wayside in Chili and there found luxurious fields of alfalfa. They carried small quantities of this seed to California in 1854, where it gained a firm foothold, until in a very few years there were vast acreages of alfalfa supporting thousands of cattle, horses and sheep. Apparently the climatic and soil conditions of California were almost ideal and the crop thrived under the care of the American farmers.

Its rapid introduction into other western states followed and was probably in large measure due to the scattering of California gold seekers who had become familiar with this wonderful crop. For many years it was supposed that alfalfa could be grown successfully in the western states only, and here its growth soon became very general. It was not until many years after it was grown extensively as far east as Nebraska, that the farmers of the Mississippi valley and eastward considered it adaptable to their conditions, or of value in competition with their other crops. During the past few years alfalfa adaptability to many soils and climes has been recognized and now many acres of it may be found as far north as Minnesota and the Dakotas, and as far east as New York and the New England states. Wherever dairy regions are found its acreage is rapidly increasing.

In Iowa alfalfa history is very brief. The crop in this state was of so little value prior to 1905, as to have been omitted from the state crop

Fig. 8.—This plot yielded 5.05 tons per acre in 1909, and 5.21 tons in 1910.

reports. In 1905 and 1906 its value was "estimated" in combinations with another crop under the head "Millet and Alfalfa." Its growth in importance in 1907 and 1908 is indicated only by the change to "Alfalfa and Millet." In 1909 and 1910 its acreage within the state is given as 23,041 and 24,132 respectively.

A few men have been growing it for from ten to thirty years or more, but 80 per cent of those growing the crop in Iowa now have seeded within the last five years, and the majority have put in their seedings within the last two seasons.

The oldest Iowa seeding of which we have record was made at Burlington something over thirty-five years ago by a farmer who brought the seed with him from his home community in Germany where it was called "thousand year clover." It continued to grow and produce seed year after year in its new home, which was a north slope of what our correspondent called "a clay sidehill" of rather low fertility. This is probably a loess soil. The original field is now included within the city limits of Burlington. Much of the original area is devoted to buildings of one sort or another, but where the alfalfa yet has opportunity to grow many plants continue to thrive. A few years ago seed was secured from this plot and is now being grown at the experiment station under comparison with other alfalfa seeds secured from various sources throughout the United States. The fact that plants from this seed are much more uniform than any other grown on the 55 plats with which we are experimenting, indicates that the natural selection which has been going on during the past 35 years may here have produced a plant of special value to Iowa farmers.

IOWA SOILS AND ALFALFA.

A little study of figures will give reason for faith in the ability of Iowa soil to grow alfalfa. In 1910, 24,132 acres of alfalfa in Iowa produced 65,629 tons of hay, or an average of 2.7 tons per acre. Most of this acreage was in the counties bordering the Missouri river, though some was reported from all parts of the state. The acreage, total yield and average yield per acre are shown for each county in table VII. The distribution of this average is better shown in fig. 9, in which each dot represents 10 acres or major fraction thereof.

These facts give some idea of the general adaptation of Iowa soils to alfalfa, yet they do not indicate fully how successfully the crop may be grown on many of the soils of the different counties, or on some soils on practically every farm in the state.

One of the best indications of the success of any crop in a given locality is the average yield per acre. From this viewpoint the growing of alfalfa is a success in all parts of Iowa, the yields in various counties ranging generally from two to three tons per acre. (Fig. 10.)

REPORTS FROM PRACTICAL GROWERS.

A general inquiry instituted early in the summer of 1911, showed forcibly that alfalfa was growing successfully on every soil and in nearly every county of the state.

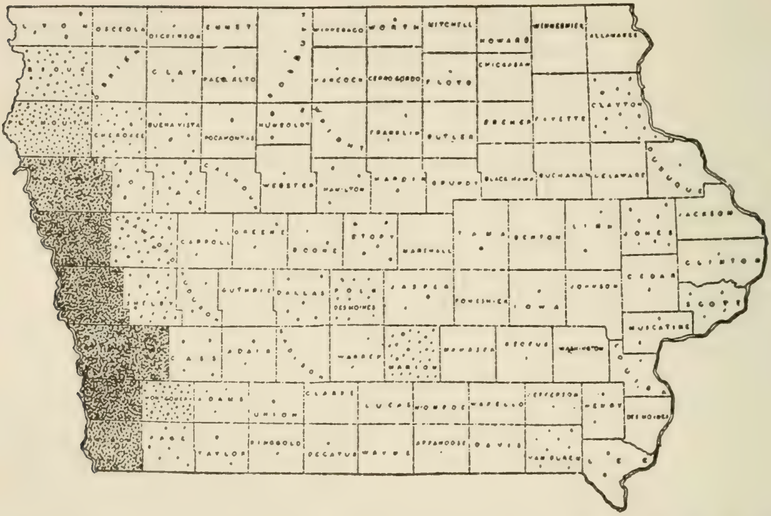

LYON
OSCEOLA
DICKINSON
EMMET
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
FRANKLIN
BUTLER
BREMER
FAYETTE
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
DES MOINES
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
SCOTT
MUSCATINE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE

Fig. 9.—Showing the distribution of alfalfa in Iowa from statistics secured according to law by township assessors, and compiled from data contained in the Iowa Crop Report, 1910. Unit represented by each dot, ten acres.

Letters were sent to eight men in each county, in most cases to men known to be interested in alfalfa growing. Each correspondent was asked for the names of the men in the county known to have grown alfalfa at some time and to indicate whether these men had succeeded with the crop, whether their efforts had been partially successful or whether they had failed. These letters were generally answered and very acceptable data were secured.

TABLE VII.

Showing Alfalfa Production in Iowa by Counties in 1910.

County	Acreage	Total Tons	Tons Per Acre	County	Acreage	Total Tons	Tons Per Acre
Adair	24	29	1.2	Jasper	24	59	2.5
Adams	49	141	2.9	Jefferson	9	27	3.
Allamakee	3	7	2.4	Johnson	------	------	------
Appanoose	6	13	2.2	Jones	77	140	1.8
Audubon	24	48	2.	Keokuk	13	26	2.
Benton	3	15	5.	Lee	19	51	2.7
Black Hawk	2	6	3.	Linn	7	14	2.
Boone	23	67	2.9	Louisa	17	63	3.7
Buchanan	3	3	1.	Lucas	3	7	2.3
Bremer	------	------	------	Lyon	37	90	2.4
Buena Vista	63	398	6.3	Madison	3	2	.6
Butler	3	4	1.3	Mahaska	10	------	------
Calhoun	4	15	3.8	Marion	272	320	1.2
Carroll	24	59	2.4	Marshall	3	11	3.7
Cass	47	111	2.4	Mills	2,526	6,866	2.7
Cedar	12	23	1.9	Mitchell	------	------	------
Cerro Gordo	------	------	------	Monona	3,167	8,290	2.6
Cherokee	185	480	2.6	Monroe	------	------	------
Chickasaw	------	------	------	Montgomery	397	1,215	3.1
Clarke	------	------	------	Muscatine	20	67	3.4
Clay	10	16	1.6	O'Brien	------	------	------
Clayton	151	------	------	Osceola	------	------	------
Clinton	13	27	2.1	Page	76	225	3.
Crawford	249	667	2.8	Palo Alto	8	31	3.1
Dallas	63	130	2.1	Plymouth	1,174	5,190	4.4
Davis	3	5	1.6	Pocahontas	12	26	2.2
Decatur	8	11	1.4	Polk	91	235	2.6
Delaware	4	4	1.	Pottawattamie	4,723	12,494	2.6
Des Moines	4	5	1.2	Poweshiek	2	6	3.
Dickinson	8	8	1.	Ringgold	14	43	3.1
Dubuque	9	23	2.5	Sac	103	341	3.3
Emmet	------	------	------	Scott	41	94	2.3
Fayette	9	21	2.3	Shelby	173	371	2.1
Floyd	13	29	2.2	Sioux	352	841	2.4
Franklin	26	77	3.	Story	57	117	3.
Fremont	2,028	6,545	3.2	Tama	6	8	1.3
Greene	20	39	2.	Taylor	27	57	2.1
Grundy	2	3	1.5	Union	6	6	1.
Guthrie	4	14	3.5	Van Buren	85	273	3.2
Hamilton	31	64	2.1	Wapello	2	5	2.5
Hancock	9	71	7.7	Warren	21	30	1.4
Hardin	7	13	1.9	Washington	10	30	3.
Harrison	4,336	10,456	2.4	Wayne	3	10	3.3
Henry	29	85	2.9	Webster	11	52	4.7
Howard	------	------	------	Winnebago	------	------	------
Humboldt	30	123	4.1	Winneshiek	1	1	1.
Ida	69	166	2.4	Woodbury	2,886	7,821	2.7
Iowa	12	20	1.7	Worth	7	------	------
Jackson	4	11	2.7	Wright	------	------	------

Of 1,016 seedings reported, only 12.7 per cent were considered as failures, which is remarkably low. Along the Missouri river the per cent was much lower than that, while in other sections where alfalfa had not been grown so generally, it was much higher.

TABLE VIII.

Showing the Success of 1,016 Alfalfa Seedings in Iowa.

	Number	Per Cent
Successful	571	56.2
Partially Successful	316	31.1
Failures	129	12.7
Total	1,016	100

From a number of counties correspondents reported that, so far as they knew, every seeding had been either wholly or partially successful, some others reported seedings as only partially successful or as total failures. Still other county correspondents replied that, so far as they knew, no one had attempted to grow the crop in their communities. The successes, partial successes and failures reported from each county are given in table IX and this information is graphically presented in figs. 11 and 12.

Considering the number of successful stands secured, the partial successes and failures must be ascribed in most case to improper methods of handling the crop, such as too many weed seeds in the soil, poorly prepared seed beds, or lack of lime, low fertility or need of inoculation.

The nine counties in which there is no record of alfalfa seedings adjoin other counties reporting considerable success with the crop. This indicates that no crop, or lack of success with it, may as plausibly be attributed to improper methods of treatment as to the soil type represented. It is fair to assume that alfalfa can be grown successfully in these localities, if proper efforts are made. Also, alfalfa is grown successfully in counties from which no reports are available, as Shelby, for example.

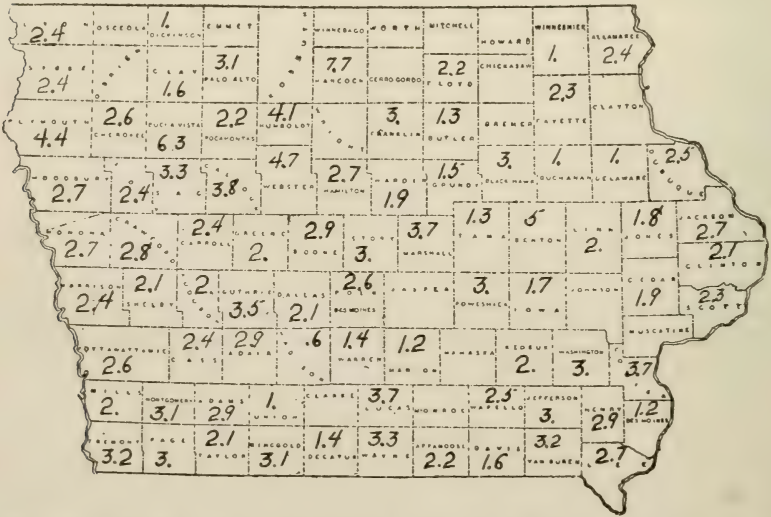

2.4
Osceola
1.
Dickinson
Emmet
Winnebago
Worth
Mitchell
Howard
Winneshiek
Allamakee
2.4
3.1
7.7
2.2
1.
2.4
Clay
Palo Alto
Hancock
Cerro Gordo
Floyd
Chickasaw
2.4
1.6
2.3
Clayton
4.4
2.6
2.2
4.1
3.
1.3
Buena Vista
Cherokee
Pocahontas
Humboldt
Franklin
Butler
Bremer
Fayette
6.3
4.7
3.
1.
1.
2.5
3.3
3.8
2.7
1.5
2.7
2.4
Webster
Hamilton
Hardin
Grundy
Black Hawk
Buchanan
Delaware
1.9
1.3
5
1.8
2.4
2.9
3.7
2.7
Carroll
Greene
Boone
Story
Marshall
Tama
Benton
Linn
Jones
Jackson
2.7
2.8
2.
3.
2.
2.7
Clinton
2.1
2.
2.6
3.
1.7
Guthrie
Dallas
Poweshiek
Johnson
Cedar
2.4
Shelby
3.5
2.1
Des Moines
Iowa
1.9
2.3
Scott
2.4
2.9
.6
1.4
1.2
Muscatine
Cass
Adair
Warren
Mahaska
Keokuk
Washington
2.6
2.
3.
3.7
2.
1.
3.7
2.5
Montgomery
Adams
Union
Clarke
Lucas
Monroe
Wapello
Jefferson
3.1
2.9
3.
2.9
1.2
Des Moines
3.2
3.
2.1
3.1
1.4
3.3
2.2
1.6
3.2
2.7
Fremont
Page
Taylor
Ringgold
Decatur
Wayne
Appanoose
Davis
Van Buren

Fig. 10.—Showing the average acre yield of alfalfa in tons of hay per cre in the various counties of the state, 1910.

TABLE IX.

Showing Number of Seedings Reported as Successful, Partially Successful and Failures in Various Counties of Iowa.

County	No. Successful	No. Partially Successful	No. Failures	County	No. Successful	No. Partially Successful	No. Failures
Adair	3	0	0	Jefferson	--------	--------	--------
Adams	7	1	3	Johnson	1	1	0
Allamakee	6	2	2	Jones	3	2	0
Appanoose	2	9	3	Keokuk	2	2	1
Audubon	1	4	0	Kossuth	1	3	2
Benton	0	1	0	Lee	1	6	0
Black Hawk	4	5	4	Linn	0	3	4
Boone	1	0	1	Louisa	4	2	0
Bremer	5	4	2	Lucas	2	5	0
Buchanan	--------	--------	--------	Lyon	3	0	0
Buena Vista	8	4	1	Madison	2	1	0
Butler	2	6	6	Mahaska	1	3	1
Calhoun	3	3	3	Marion	4	6	6
Carroll	6	3	1	Marshall	2	0	0
Cass	8	5	3	Mills	20	3	0
Cedar	4	3	1	Mitchell	0	4	2
Cerro Gordo	4	1	2	Monona	33	13	2
Cherokee	13	3	3	Monroe	0	1	0
Chickasaw	0	2	0	Montgomery	29	9	0
Clarke	--------	--------	--------	Muscatine	7	4	2
Clay	0	3	0	O'Brien	2	0	0
Clayton	2	8	1	Osceola	0	3	1
Clinton	3	6	0	Page	15	7	2
Crawford	5	2	0	Palo Alto	1	0	0
Dallas	4	1	1	Plymouth	6	5	2
Davis	0	1	0	Pocahontas	4	3	1
Decatur	--------	--------	--------	Polk	1	1	0
Delaware	9	4	4	Pottawattamie	48	15	1
Des Moines	1	1	2	Poweshiek	2	5	1
Dickinson	2	4	1	Ringgold	0	1	2
Dubuque	2	5	1	Sac	14	6	2
Emmet	--------	--------	--------	Scott	8	4	3
Fayette	3	1	3	Shelby	--------	--------	--------
Floyd	1	0	0	Sioux	19	7	0
Franklin	1	0	0	Story	4	5	0
Fremont	29	4	0	Tama	5	4	2
Greene	1	0	0	Taylor	3	2	4
Grundy	5	2	1	Union	5	11	1
Guthrie	11	11	0	Van Buren	8	5	5
Hamilton	1	3	1	Wapello	2	2	0
Hancock	1	0	0	Warren	3	1	0
Hardin	3	1	0	Washington	0	2	3
Harrison	49	6	5	Wayne	3	5	0
Henry	7	10	3	Webster	5	2	0
Howard	0	1	0	Winnebago	1	1	0
Humboldt	9	3	3	Winneshiek	1	2	0
Ida	6	0	0	Woodbury	52	8	1
Iowa	1	1	1	Worth	--------	--------	--------
Jackson	4	0	3	Wright	5	3	4
Jasper	2	4	0				

The mere fact that the majority of men who have seeded alfalfa in any particular county have failed or partially failed, should deter no one from growing the crop, but rather should lead to greater care in giving the crop every advantage. One man failed year after year to get a stand for seven successive years. With the seventh seeding the field was inoculated, and now for several years he has demonstrated that he can grow alfalfa most successfully on all parts of his farm. The one thing lacking on his soil was inoculation.

Other men were successful after three or four failures had taught them what to do. Some found that lime was needed to correct an acid

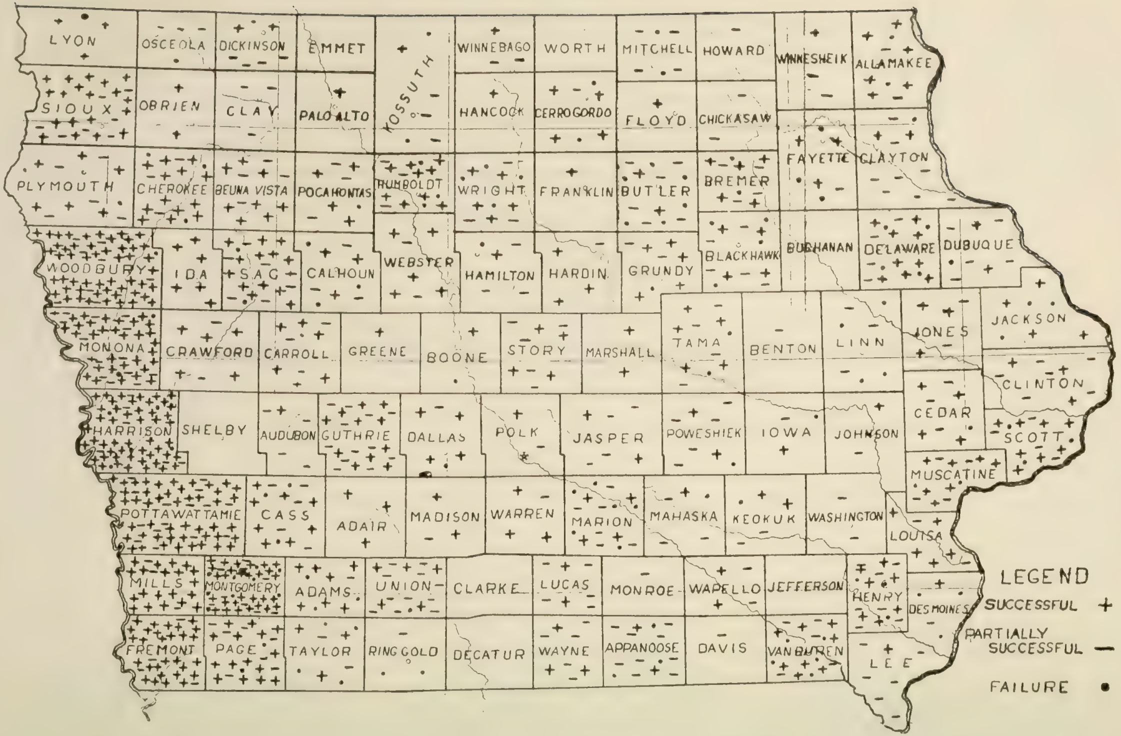

LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHEIK
ALLAMAKEE
SIOUX
OBRIEN
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BEUNA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
BLACKHAWK
BUCHANAN
DELAWARE
DUBUQUE
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RING GOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE
LEGEND
SUCCESSFUL +
PARTIALLY SUCCESSFUL —
FAILURE •

Fig. 11.—Showing distribution of alfalfa reported and degree of success secured.

condition of soil. Still others found it necessary to increase organic matter and available fertility, or to remedy poor drainage.

While there are probably many seedings in counties of which we have no record, we believe the map fairly indicates the distribution of alfalfa grown.

The many reports received from practical growers are of more than usual interest and value, since their practical experience has actually demonstrated many of the most helpful practices in handling the crop. Some of the practices mentioned most often are arranged below in order, according to the number of times they were given, their comparative approximate value being indicated numerically:

1.	Work the seed bed well	130
2.	Do not pasture	60
3.	Disk after cutting	50
4.	Keep the weeds down	40
5.	Sow early in the fall or late in the summer	30
6.	Cut the nurse crop for hay	10
7.	Have the nurse crop thin	10
8.	Sow shallow	10
9.	Leave good growth for winter	10
10.	Pasture only with hogs	10

Additional suggestions regarding the crop which have been offered more or less often in approximately the same words are

1. "Good soil is necessary to get a stand."
2. "If nurse crop is used it should be thin."
3. "Potatoes make a good crop to precede alfalfa."
4. "Cutting too early injures following crops."
5. "Disking thickens the stand."
6. "It is hard to start and hard to kill."
7. "It stands cold and drought through."
8. "It is fine for brood sows."
9. "Hay and pasture are double those of any other crop."
10. "No good in wet soil."

ALFALFA ON THE DIFFERENT SOIL TYPES.

The state may be divided into six general soil areas. While there will be a wide range in the character of the soil within each of these, as it may be affected by drainage, present available fertility, etc., yet each area has more or less uniform characteristics. These general soil areas may be designated as follows: Missouri Loess, Moraine, Wisconsin Drift, Iowa Drift, Mississippi Loess, Southern Iowa Loess. Their limits are outlined on the map, fig. 12.

A considerably greater per cent of successful fields of alfalfa will be found on the Missouri Loess and Moraine soil areas than on the others. The soils of the Iowa drift and southern Iowa loess seem naturally to be more poorly adapted to alfalfa than the others, though even on these at least some fields are very successful, as is indicated by the average yields of hay secured.

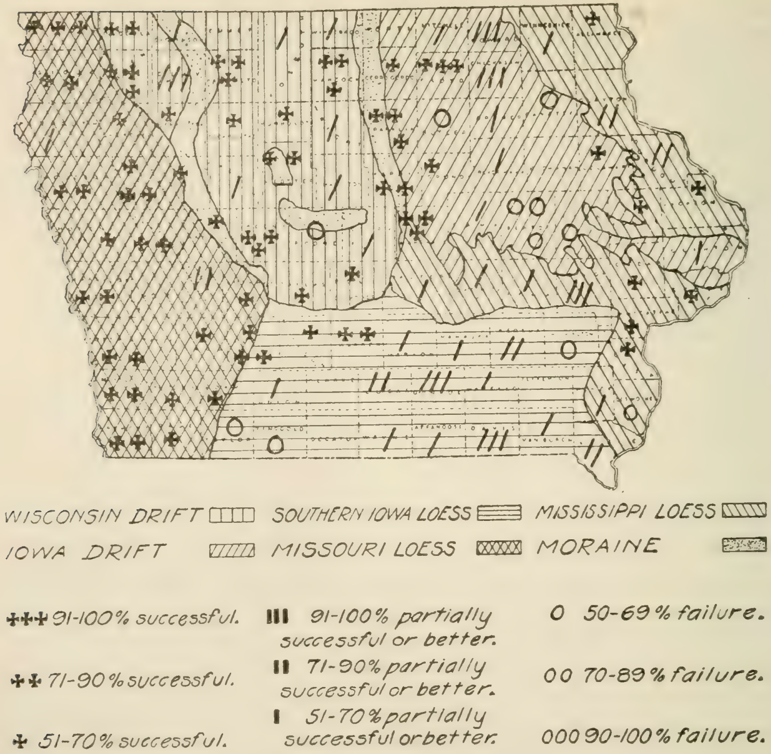

WISCONSIN DRIFT
SOUTHERN IOWA LOESS
MISSISSIPPI LOESS
IOWA DRIFT
MISSOURI LOESS
MORAINE
+++ 91-100% successful.
++ 71-90% successful.
+ 51-70% successful.
III 91-100% partially successful or better.
II 71-90% partially successful or better.
I 51-70% partially successful or better.
0 50-69% failure.
00 70-89% failure.
000 90-100% failure.

Fig. 12.—Map showing success with alfalfa on the different soil areas of Iowa.

TABLE X.

The Per Cent of Seedings Reported as Successful, Partially Successful, and Failures, on the Various Soil Areas.

Soil Areas.	Per Cent Successful	Per Cent Partially Successful	Per Cent Failures
Missouri Loess	71.1	21.6	7.1
Moraine	59.4	30.3	10.1
Wisconsin Drift	48.3	36.4	15.2
Iowa Drift	40.5	37.3	22.2
Mississippi Loess	41.1	41.5	17.3
Southern Iowa Loess	35.6	46.3	18.0

CO-OPERATIVE EXPERIMENTS OVER THE STATE.

To determine what treatments are necessary to bring success on different soils, a number of co-operative alfalfa fields were located in the summers of 1910 and 1911. On some of these, alfalfa was seeded in the fall of 1910, and upon others in the spring or fall of 1911.

Each field was so divided as to represent twelve different treatments, which were as follows:

1. No special treatment.
2. Inoculation.
3. Inoculation and cultivation.
4. Lime.
5. Lime and inoculation.
6. Lime and inoculation and cultivation.
7. Bone meal.
8. Bone meal and inoculation.
9. Bone meal and inoculation and cultivation.
10. Manure.
11. Manure and inoculation.
12. Manure, inoculation and cultivation.

It should be stated here that it was not intended in this work to attempt to determine which treatments are necessary or which are unnecessary in any particular community, but rather the treatments which are necessary or beneficial in a majority of the cases in the larger sections of the state, or on the different types of soil. Before this can be done very accurately, the results of a very much larger number of test will need to be considered.

The fact that a certain treatment was found to be necessary on a particular field, would not necessarily mean that this treatment was essential on all the soils of the neighborhood, or even the soil across the road in a field which had perhaps been handled in an entirely different way. And on the other hand the fact that a trial had shown that a treatment was not beneficial to alfalfa on a particular field would not determine that this treatment would not be beneficial on other fields in the same neighborhood.

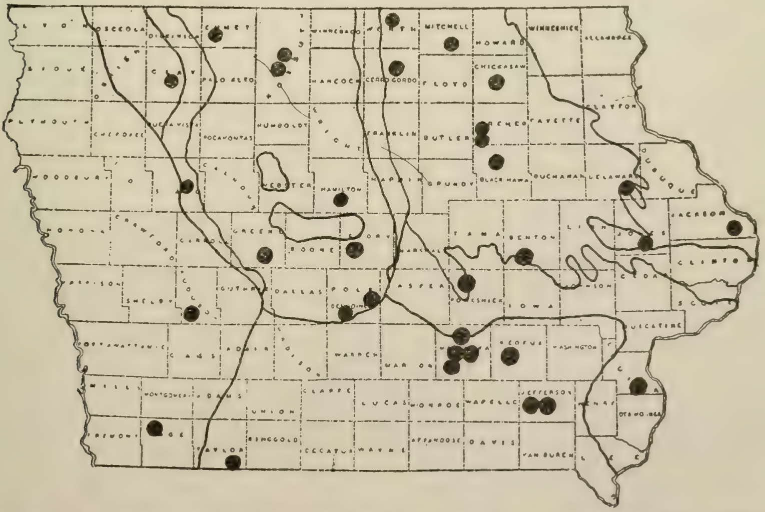

MITCHELL
HOWARD
WINNESHIEK
PALO ALTO
CERRO GORDO
FLOYD
CHICKASAW
POCAHONTAS
HUMBOLDT
FRANKLIN
BUTLER
FAYETTE
HAMILTON
BLACK HAWK
BUCHANAN
BOONE
BENTON
DALLAS
WARREN
KEOKUK
WASHINGTON
JEFFERSON
LUCAS
MONROE
WAPELLO
APPANOOSE
DAVIS
VAN BUREN
RINGGOLD
UNION
CLARKE
JACKSON

Fig. 13.—Showing the location of the one acre co-operative alfalfa experiments, also limits of the six soil areas.

An attempt was made to distribute these co-operative acre trials in such a way that all types of soil would be represented, and especially sections from which the greatest difficulty was reported. The distribution appears in fig. 13, and this table:

ALFALFA CO-OPERATORS 1910-1911.

Name	Town	County	Direction and Distance From Town.
Avery, A. M	Mason City	Cerro Gordo	3 mi. SE of Mason City
Bates, H. A	Algona	Kussuth	5 " SE of Burt
Boyack, Geo. W	Grinnell	Poweshiek	2½ " SE of Grinnell
Brackle, Peter	Osage	Mitchell	3 " E of Osage
Brand, Wm	New Hampton	Chickasaw	2½ " SE of New Hampton
Brawner, C. L	Fairfield	Jefferson	5 " W of Fairfield
Claypool, W. W	Spencer	Clay	1 " S of Spencer
Clinkenbeard, Mace	Fairfield	Jefferson	2½ " NE of Libertyville
Chamberlain, A. P	Des Moines	Polk	1 " NE of Corporation
Crozier, W. H	Oskaloosa	Mahaska	¼ " NW of Oskaloosa
Edriss, E. & Son	Oskaloosa	Mahaska	1 " NE of Oskaloosa
Espe, K. P	Jewell	Hamilton	1 " S of Jewell
Farnun, G. E.	Ames	Story	S edge of City Corporation
Forest, C. R	Miles	Jackson	3½ " SE of Miles
Garrett, Chas. O	Mitchellville	Polk	
Hill, V. S	New Sharon	Mahaska	3½ " NE of Sharon
Horsewell, J. R	Estherville	Emmet	
Kauba, Frank	Blairstown	Benton	3½ " SW of Blairstown
McCaffree, H. A	Janesville	Bremer	¼ " NE of Waverly Jct.
McCray, H. S	Brayton	Audubon	6 " SE of Brayton
McWilliams, G. H	Wall Lake	Sac	4 " NE of Wall Lake
Mawdsley, J. R	Burt	Kossuth	6 " SE of Burt
Parks, Geo. W	Olin	Jones	1 " E of Olin
Ramsey, F. W	Athelston	Taylor	
Reed, E. E	Hopkinton	Delaware	North Corporation Line
Reeves, Elmer	Waverly	Bremer	W. Corporation Line, Wav.
Rustad, Oscar	Northwood	Worth	1 mi. W of Northwood
Sar, Frank	Essex	Page	2 " E of Essex
Shipfer, A. O	Sigourney	Keokuk	
Shoemaker, E	Waterloo	Blackhawk	2½ " NW of Waterloo
Soseman, Thos	Oskaloosa	Mahaska	1½ " W of Oskaloosa
Trites, Ed R	Oakville	Louisa	1½ " SW of Oakville
Zeller, Willard	Cooper	Greene	2⅔ " NE of Bagley

More than 150 co-operative experiments are now under way, and many more will be undertaken. Those interested in conducting small plot tests with alfalfa would do well to address Professor J. Buchanan, Superintendent of Co-operative Farm Crop Experiments, Ames, Iowa, for more definite information.

BENEFICIAL SOIL TREATMENTS FOR ALFALFA.

Among the co-operative tests on the different soil types, only two soils were found where at least one of the treatments,—inoculation, lime or manure, or a combination of two of these, did not prove to be very beneficial to the alfalfa, resulting in a more vigorous, healthy growth and a larger yield.

On a number of the soils, where one or more of these treatments was beneficial, a fair crop was secured without treatment. A seeding made without treatment might be termed successful, yet the results secured, as measured by the yield of hay and the general vigor of the seeding, would not approach the results attained when the soil was properly prepared.

Of the two fields on which none of the treatments showed any effects, at least one had received a good application of manure over the

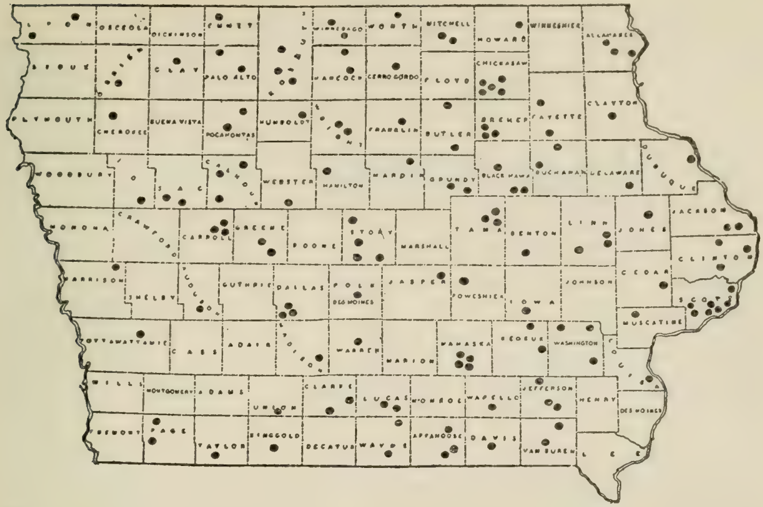

OSCEOLA
DICKINSON
EMMET
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
FRANKLIN
BUTLER
BREMER
FAYETTE
CLAYTON
WOODBURY
SAC
WEBSTER
HAMILTON
HARDIN
GRUNDY
BLACK HAWK
BUCHANAN
DELAWARE
MONONA
CARROLL
GREENE
BOONE
STORY
MARSHALL
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
HARRISON
SHELBY
GUTHRIE
DALLAS
POLK
DES MOINES
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN

Fig. 14.—Each dot shows the location of a co-operative field where different treatment of the soil and dates of seeding are being tried out. Most of these were established in 1912, therefore, data on them is not yet available.

whole field the preceding year and this may have had considerable to do in blanketing the effects of the later treatments.

On four of these fields the alfalfa was an absolute failure on those portions which received no treatment of any sort, while good yields were secured on these soils when the necessary treatment had been made. On many of the fields the alfalfa on the untreated portion was yellowish, weak and short. Considering these facts, then, it becomes important to know the extent to which the different treatments are either beneficial or essential, when used either alone or in combination.

These treatments will be considered now only from the standpoint of their benefit to the alfalfa seeding as shown by these tests. No consideration will be given, for the present, to general recommendations regarding the time and methods of making the applications, etc.

Manure:—The reports indicate that on nine of the fields manure was absolutely essential to the greatest success with alfalfa. Fourteen reports show that while it was beneficial it was not necessarily essential to success provided that some other treatment, possibly bone meal or inoculation, was given. On eight fields the crops indicated that while the manure was beneficial, it would not bring the greatest success when used alone; something else was also necessary.

Averaging the reports of all the men who estimated the yields of the different plots, on the basis of 1.5 tons per acre for the untreated plots, the manured plots averaged 2.53 tons per acre, an increase in yield of hay of over 75 per cent.

TABLE XI.

The Effect of Ten Tons of Manure per Acre Before Seeding Alfalfa.

Effect of Treatment.	No. of Reports.
Essential to greatest success	9
Beneficial, but not necessarily essential in establishing a successful field	14
Beneficial, but some additional treatment also necessary for best results	8
No benefit from application	3

Bone Meal:—To determine the effect of an additional supply of phosphorus, bone meal was used on a portion of the plots. While it will be seen by referring to table XII, that the bone meal was beneficial in many cases it was not so necessary as manure. When used it should be in connection with manure rather than alone as it seems quite apparent that the organic matter and readily available nitrogen in the manure is often quite necessary in getting the alfalfa well started.

TABLE XII.

The Effect of 400 Pounds of Bone Meal per Acre Before Seeding Alfalfa.

Effect of Treatment.	No. of Reports.
Essential to greatest success	1
Beneficial, but not necessarily essential in establishing a successful field	11
Beneficial, but some other treatment also necessary for best results	7
No benefit from application	6

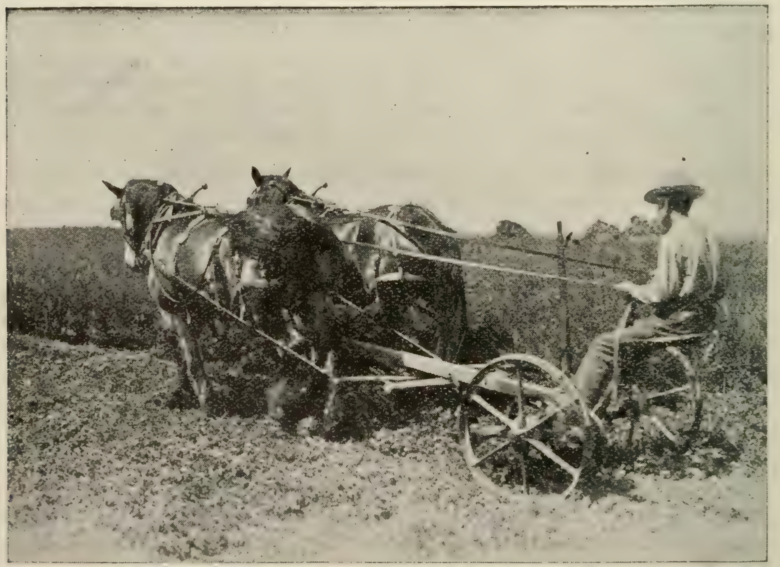


Fig. 15.—Cutting alfalfa at the Iowa Experiment Station. This field made 2.95 tons per acre of field cured hay, first cutting, 1912, and a total of 7.03 tons were cut during the season.

Lime:—On at least two of the fields the lime was absolutely essential to success and on ten fields it was shown to be beneficial in promoting a strong vigorous growth. In a number of cases the lime appeared to be of no value when applied alone, but when inoculated soil was used in connection with it, an excellent growth was secured.

TABLE XIII.

The Effect of Applying Lime at the Rate of 2,000 lbs. per Acre.

Effect of Treatment.	No. of Reports.
Essential to greatest success	2
Beneficial, but not necessarily essential in establishing a successful field	10
Beneficial, but some other treatment also necessary for best results	7
No benefit from application	6

Inoculation:—These tests unquestionably indicate the value and need of inoculating the soil before seeding alfalfa. On nine of the fields the reports indicate that inoculation was absolutely essential to the best results though in many cases some other treatment was also necessary. This was most often manure, though on a number of soils which were undoubtedly acid, an application of lime was also necessary before the inoculation was effective.

TABLE XIV.

The Effect of Applying Inoculated Soil at the Rate of 300 lbs. per Acre.

Effect of Treatment.	No. of Reports.
Essential to greatest success	9
Beneficial, but not necessarily essential to establishing a successful field	14
Beneficial, but some other treatment also necessary for best results	9
No benefit from application	4

FIELDS INFLUENCED BY TREATMENT

In reporting to the Experiment Station the first cutting in 1911 the co-operators were asked to estimate the comparative yields of field cured hay on the portions receiving the different treatments basing their comparisons on an assumed yield of 1.5 tons per acre on the untreated plots. From table XV it will be seen that on this basis the lime increased the yield of the first cutting nearly .5 ton; the bone meal .64 of a ton; inoculation .83 of a ton, and manure 1.03 tons.

Fig. 16.—This plot of alfalfa on the station fields at Ames, produced 2.5 tons of field cured hay when cut on June 8. Photograph shows condition on May 25, 1906.

TABLE XV.

The Effect of Various Treatments on Alfalfa, as Measured by the Estimated Yield of Hay.

Treatment	Tons per acre	Increased yield due to treatment
Manure, 10 tons per acre	2.53	1.03
Inoculation, 300 lbs. per acre of alfalfa soil	2.33	.83
Bone Meal, 400 lbs. per acre	2.14	.64
Lime, 2,000 lbs. per acre	1.97	.47
None	1.50	

Assuming for the time that a stand of alfalfa could be secured without the use of manure; that the assumed yield was placed twice too high, and that the actual average increase from the use of manure was only one half that shown, still the increase in yield of alfalfa hay in the first season alone would have a greater value than the total yield of the average acre of oats.

Since approximately one-half of the annual yield is secured in the first cutting, the total increase for the year would be one ton, the value of which in 1910 was estimated to be $11.60. On no other farm crop can manure be so profitably used as on alfalfa.

On the same basis an application of 300 lbs. of alfalfa soil resulted in an average increase in the yield of hay valued at $9.63 for each acre. A good return for 300 pounds of soil.

The use of 2,000 lbs. of lime valued at $5.00 per car load at the quarry, gave an increase the first year valued at $5.45 per acre.

It must be remembered that treatments such as lime and inoculation influence not only the first crop after seeding, but every year's crop so long as the alfalfa remains.

In a number of cases it has been observed that the differences were much more marked in the second and third years than in the first.

Considering these average results from trials over the state, can one afford not to use manure, or lime or inoculation in seeding a field to alfalfa even though some of these may not be necessary on the particular soil in question?

There is only one answer; no farmer can afford to run the risk of failure since there is no way of measuring in advance the results of these treatments.

After these co-operators had grown alfalfa for two years and observed the effect of different treatments, some general information was asked of each as to the success with which alfalfa could be grown in his locality, provided proper methods were used in preparing the seed bed and in seeding. The replies to these general questions indicate, perhaps better than anything else, what may be expected of the crop when its few simple requirements (sweet soil, bacteria, available fertilizer, etc.) are met.

Of all the co-operators who responded to the question, "As a result of your experiment have you decided to grow alfalfa on a larger scale on your farm?" 100 per cent responded in the affirmative.

All but one answered in the affirmative the question, "As a result of your experiment would you recommend alfalfa to your neighbors?"

The question, "Why have you decided to increase your acreage and to recommend alfalfa to your neighbors?" brought the following answers:

"I consider it the most profitable crop the Iowa farmer can grow to a certain extent."

"Because I am sure it can be raised on the right kind of ground with right treatment."

"It is a valuable crop, also a soil fertilizer."

"Because it is the most profitable crop we can raise."

"I have been raising it for 15 years and it is much more profitable."

"It is the most satisfactory forage crop ever planted."

"I believe it will be a paying crop. This is quite a dairy section and we need rich feeds."

"I think it is the best forage crop we have."

"I think it is a very fine crop."

"Because I believe it is a practical crop for Iowa."

"Because I think it is the best paying crop we can raise."

TRIALS AT THE STATE EXPERIMENT STATION

As an indication of what alfalfa will do in Iowa in a series of years, when grown on what might be termed an average Iowa soil, the yields secured from numerous seedings made on the Iowa Agricultural Experiment station fields at Ames will be of interest.

The station records show that since 1904, 16 different seedings have been made. Some crops were seeded in the spring with a nurse crop, while others were put in alone. Still other plots were seeded during August on summer fallowed land. Other variations are also recorded, such as the method of seeding, inoculation of the field, use of lime or manure, etc. However no comparison is to be made of these different treatments. The conclusions drawn might be entirely misleading, because the best methods and treatments necessary will vary greatly in different seasons or on different soils. The readings are presented rather to indicate the results which may be expected from this crop when the demands of the plant are fully met.

As has been said, the soil types found at Ames are rather average for the state; brown loam, black sandy loam and black silt loam. The fertility is only average, no commercial fertilizers are ever used and manure was used only in such manner as is possible on any good stock farm.

In preparing the seed bed or in seeding, no methods were used which would not be practical on any Iowa farm. In preparing the seed bed, however, as in all the operations, the work was thoroughly and carefully performed, for with a crop at stake so valuable as is alfalfa, no farmer can afford to leave anything to chance.

The yields secured under these conditions are recorded in tables XVI, XVII, XVIII.

In 1905 five plots gave an average yield of 4.36 tons of hay per acre, the greatest yield from any one plat being 6.12 tons. In 1906 the average yield of three plats was 5.42 tons per acre, and in 1907 with two new seedings considered, the average was 4.5 tons. The yields for 1908

Fig. 17.—Members of farmers' clubs when visiting the experiment station inspect the alfalfa fields.

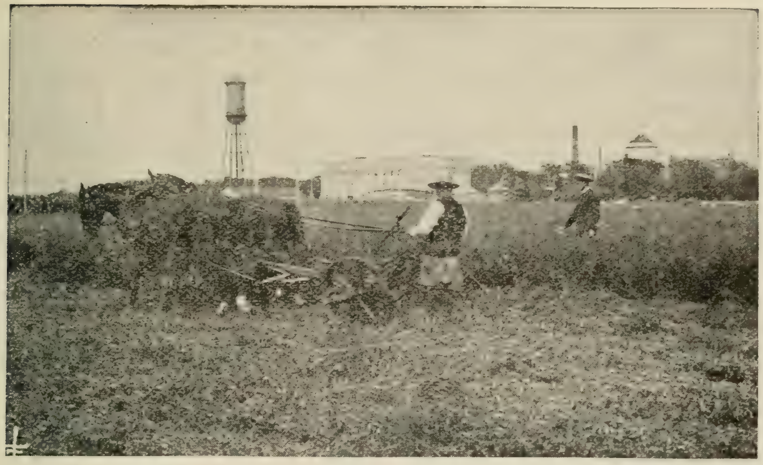


Fig. 18.—Showing second cutting of alfalfa on station field at Ames, July. 17. Total yield of field cured hay from three cuttings during the season, 7.24 tons.

are not available. During the spring and late summer of 1908 a number of new seedings were made so that during the years 1909, 10 and 11, eleven plots were under observation. The average yields from these plots was 4.92 tons per acre in 1909, 4.28 in 1910, and 3.68 in 1911.

It will be observed that the average yield increased considerably during the three years; nearly half a ton per acre. This is no doubt partially due to the fact that the rainfall for 1911 was very light and that of 1910 considerably below the average. It is also true, however, that on some of the plots the blue grass made serious inroads, as most of these plots received no cultivation.

TABLE XVI.

Yield of Field Cured Alfalfa Hay in 1905 and 1906 on 5 Plots at Ames.

PLOT NO.	11	12	13	14	15
1905					
Yield per A.—Tons	3.87	4.64	6.12	4.32	2.86
1st Cutting June 13-17	1.13	1.66	2.00	1.47	1.01
2nd Cutting July 8-10	1.29	1.73	2.12	1.53	.93
3rd Cutting August 14-17	1.45	1.25	2.00	1.32	.92
1906					
Yield per A.—Tons	***	4.16	***	7.24	***
1st Cutting June 8		1.66		2.5	
2nd Cutting July 17-18		1.25		2.43	
3rd Cutting August 25-28		1.25		2.31	
Average Yield per Acre	3.87	4.4	6.12	5.78	2.86

***Plowed in April, 1906.

TABLE XVII.

Yield of Field Cured Alfalfa Hay on Plots at Ames, 1906-11.

PLOT NO.	A6	B7	C8	D9
1906				
Yield per A.—Tons	4.86	----------	----------	----------
1st Cutting June 8	2.23	----------	----------	----------
2nd Cutting July 20	1.2	----------	----------	----------
3rd Cutting August 28	1.43	----------	----------	----------
1907				
Yield per A.—Tons	4.42	4.69	4.41	----------
1st Cutting June 25	1.74	2.00	1.77	----------
2nd Cutting August 1	1.65	1.49	1.49	----------
3rd Cutting October 5	1.03	1.2	1.15	----------
1909				
Yield per A.—Tons	5.0	4.56	4.96—	5.7
1st Cutting June 18	2.37	2.05	2.25	2.56
2nd Cutting August 4	1.63	1.54	1.67	1.83
3rd Cutting October 4	1.0	.97	1.04	1.31
1910				
Yield per A.—Tons	4.54	4.14	3.02	5.06
1st Cutting June 22	2.23	1.77	1.70	2.45
2nd Cutting July 26	1.28	1.57	.78	1.33
3rd Cutting September 10	1.03	.80	.54	1.28
1911				
Yield per A.—Tons	5.11	5.43	2.10	5.02
1st Cutting June 5	2.14	2.63	1.20	2.67
2nd Cutting July 10	1.60	2.23	.63	1.22
3rd Cutting August 29	1.37	.57	.27	1.13
Average Yield per A. from the plot—Tons	4.78	4.7	3.62	5.26

TABLE XVIII.

Yield of Field Cured Alfalfa Hay at the Iowa Agricultural Experiment Station 1909-1911.

PLOT NO.	1	2	3	4	5	6	7
1909							
Yield per A.—Tons	4.25	4.05	4.4	5.0	5.9	5.35	
1st Cutting June 18	2.2	2.85	2.7	2.45	3.3	2.55	lost
2nd Cutting August 4	1.5	1.5	1.1	1.5	1.7	1.85	1.30
3rd Cutting October 4	.55	.7	.6	1.05	.9	.95	.80
1910							
Yield per A.—Tons	3.57	4.36	3.68	4.40	4.53	5.21	4.75
1st Cutting June 22	1.96	2.41	2.02	2.28	2.56	2.92	2.39
2nd Cutting July 26	1.12	1.29	1.1	1.38	1.24	1.35	1.34
3rd Cutting August 10	.49	.66	.56	.74	.73	.94	1.02
1911							
Yield per A.—Tons	3.23	3.37	3.21	3.20	3.31	3.39	4.13
1st Cutting June 5	2.30	2.44	2.25	2.47	2.6	2.42	2.64
2nd Cutting July 26	.89	.9	.93	.71	.69	.94	1.04
3rd Cutting Aug. 29	.02	.03	.03	.02	.02	.03	.45
Average Yield per A.—from the plot	3.68	3.92	3.76	4.2	4.58	4.65	4.44

Good yields may be expected for a number of years when the blue grass is kept out, especially if the soil was in good physical condition and fertile when the plot was seeded. It will be observed that plot A6, which was left in alfalfa for six years, maintained its yielding power to the very last. It produced an average of over 4¾ tons per acre for the five years for which the records are available.

Plot D9, which was in alfalfa for three years produced better than five tons each year, while plot 13 produced over six tons in a single year and plot 14 nearly 7¼ tons with an average for two seasons of 5¾ tons per acre.

The lowest acre yield secured from any one plot in a season was from plot 15 in 1905 when the yield was 2.86 tons. Even this yield however is better than is secured, except under unusual conditions, from any of our other tame hays.

SELECTION AND TREATMENT OF THE ALFALFA SOIL

On one hundred and twenty-eight men representing all manner of soil types, who reported to the Iowa Agricultural Experiment station their method of seeding and handling the alfalfa crop, 85.5 per cent were successful. This evidence tends to strengthen our belief that, provided proper methods are used in preparing the soil to grow this crop, it can be grown successfully on at least portions of practically every farm in Iowa, though no doubt there are particular soils and locations which are better adapted to its growth than others.

CHOICE OF SOILS

In selecting the soil or field which is to be seeded to alfalfa there are several conditions which must be considered. They are:

1. The Texture of the Soil.
2. The Drainage of the Soil.
3. The Fertility of the Soil.
4. The Need of Inoculation.
5. The Need of Lime.

The successful growing of alfalfa or any other legume may be impossible if any one of these factors is overlooked. Many Iowa soils are open and friable, well drained and fertile, contain the necessary bacteria and do not need lime, and they may grow alfalfa very successfully merely by applying good cultural methods. Most Iowa soils, however, will give much better results when available fertility is supplied in the form of manure. Others may be ideal for alfalfa save in that they require the addition of the necessary bacteria; while others, particularly in south central and north central Iowa, need lime. The only safe plan is to insure the presence of the conditions necessary by supplying them. The crop will far more than repay the trouble.

TEXTURE OF SOIL

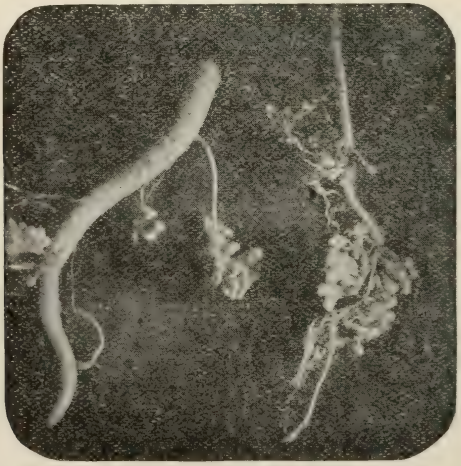
Alfalfa gives much the best results on deep, loose, open, friable soils, such as are represented by the loess areas along the Missouri and Mississippi. On these soils there is practically no trouble in getting a stand except on some of the highest points where a good application of manure seems necessary. Soils which are light and friable, due to a large per cent of sand are not usually well adapted to alfalfa because they are rather low in fertility. This difficulty may be corrected by the free use of manure when excellent results may be expected. Though good fields are occasionally found on heavy soils, such as contain considerable clay, this is exceptional. Heavy soils seem well adapted to sweet clover, however, and the growth of that crop for a couple of seasons helps to put the land in condition for alfalfa seeding. The roots of the more hardy clover open the soil to some depth and leave considerable amounts of organic matter and readily available fertility.

DRAINAGE

It is useless to attempt to grow alfalfa upon land which is not thoroughly well drained, either by nature or by the use of tile or open ditches. Some of the best results secured have been on drained bottom lands, likely because of their fertility. But the fertility alone without good drainage would not have produced these results. This does not mean that the highest ground available should be chosen as this ground is likely to be quite unfertile. Land which is slightly rolling or nearly level and well drained is usually considered the best.

MANURE

Eight to twelve tons per acre of good manure should be applied before plowing for alfalfa, for the use of manure is by far the most important factor in securing successful results on Iowa soils. It is a notable fact that of 23 correspondents who make special mention of the fact that they manured their fields before plowing but one failed.



Courtesy R. E. Buchanan, Ames, Iowa.

Fig. 19.—Tubercles such as are formed on alfalfa and sweet clover roots by bacteria which feed upon the free nitrogen of the air. This nitrogen finally becomes available to the host plant, and ultimately to other crops which may follow in the rotation.

While good stands and yields of alfalfa have been secured on fertile soils without manure, yet yields are in almost every case largely increased by its use. On soils of only medium fertility, manure is essential to the greatest success; on soils below the average, successful stands are practically never secured without its liberal use.

Before the alfalfa plant has established its root system, so as to give it a large feeding area, and before the bacteria have developed in sufficient numbers to make available the unlimited supply of nitrogen in the air, an abundance of available plant food must be at hand. Even after the plant is well established the yield of hay will be much increased by an occasional top-dressing of manure. Manure stimulates the activity of the alfalfa bacteria and makes it possible for the alfalfa to draw more heavily upon the atmospheric nitrogen. The deep roots of the alfalfa plant make it possible for it to secure much of its mineral plant food far below the surface, where our ordinary farm crop's roots cannot grow. Old alfalfa fields which are well established probably take but a comparatively small per cent of their plant food elements from the surface soil, since a large per cent of the fine-feeding roots are to be found far down in the sub-soil.

INOCULATION

While a majority of the successful stands of alfalfa in Iowa have been secured without inoculation, yet fewer failures are recorded where the presence of the necessary bacteria was guaranteed by inoculation. Besides, the co-operative experiments show that in practically every instance where the soil was inoculated, a more vigorous growth resulted. In many cases the difference was the difference between a success and a total failure. Considering the ease and slight expense of inoculation, a farmer can ill afford to risk a loss by not inoculating.

On soils which do not naturally contain these bacteria it is absolutely essential that they be introduced. As there is no way of determining whether these bacteria are in a given soil without attempting to grow alfalfa, the only safe way is to inoculate. A small area may be seeded and inoculated the first year, from which soil may be secured for larger areas in following seasons. There are two methods by which this inoculation may be secured.

If soils can be secured from a nearby alfalfa field, where vigorous plants have an abundance of tubercles on their roots, use 300 lbs. or more of soil per acre, distributing it as uniformly as possible. This work may well be done at the time of seeding. If soil is not available from an alfalfa field, soil from a sweet clover patch may be used. This soil should not be exposed to the sun any more than necessary, and may well be applied toward evening and harrowed in thoroughly at once. The direct rays of the sun soon kill the bacteria.

Attempts have been made for years to develop pure cultures of bacteria for the different legumes. In the main the results have not been particularly satisfactory. More recently, however, two commercial concerns have put out cultures which have met with quite general success; one of these is "Farmogerm" manufactured by Earp Thomas Farmogerm Company, Bloomfield, New Jersey; and the other "Nitragin" manufactured by the German-American Nitragin Co., Milwaukee, Wisconsin. Both of these pure cultures have been used on the Iowa Agricultural experiment station plots, though the tests have not been thorough enough as yet to permit unreserved recommendation. While the effect of the inoculation was very apparent, it is possible that just as great a benefit might have resulted from the use of inoculated soil. The claim is made among bacteriologists, however, that the pure cultures may add to the soil not only a great number of bacteria, but also bacteria which are more virulent and vigorous than those already found there. However, until more tests have been made, we believe that the soil inoculation must be recommended.

THE USE OF LIME

The co-operative alfalfa tests indicate that at least on many Iowa soils the use of lime is to be recommended. Its application has in many cases been very beneficial. No harm can come from an application of 2,000 or more pounds per acre especially if this be in the form of limestone screenings or finely ground limestone, which are the best forms to use. One thousand to 3,000 pounds will no doubt be sufficient on most Iowa soils though on similar soils in adjoining states experiments have shown that in some cases as much as 6,000 pounds are necessary.

In a number of instances in this state application of lime was shown to be absolutely essential before alfalfa could be grown successfully, indicating that the soil was strongly acid. In other cases while a satisfactory growth was secured without the use of lime, yet when it was used the growth was more vigorous and of better color.

Alfalfa requires for its best growth a large amount of calcium, which is the active principle of lime. Also alfalfa cannot grow and thrive in soils which are at all acid. The nitrogen-gathering bacteria, which live upon the alfalfa roots, and which in turn provide the alfalfa plant with most of its supply of nitrogen, cannot live, thrive and multiply in an acid soil.

Soils may be tested for acidity easily by the use of litmus paper. Take soil from a few inches below the surface of the ground and after thoroughly wetting it, press it into a ball. Halve it with a knife and after placing a piece of blue litmus paper between the two cut surfaces, again press parts into a ball. At the end of ten or fifteen minutes remove the litmus paper and examine. If it has changed from blue to a distinctive red color, one may be reasonably sure that the soil is acid and is in need of lime.

Litmus paper can be secured at any good drug store.

Lime should be applied after plowing and thoroughly disked in, preferably some weeks in advance of seeding. It may be spread from a wagon with a shovel or a manure spreader may be used. An old broadcast grain seeder may also be used.

Those who contemplate seeding alfalfa should send for Circular No. 2 of the Iowa Experiment Station, "Liming Iowa Soils."

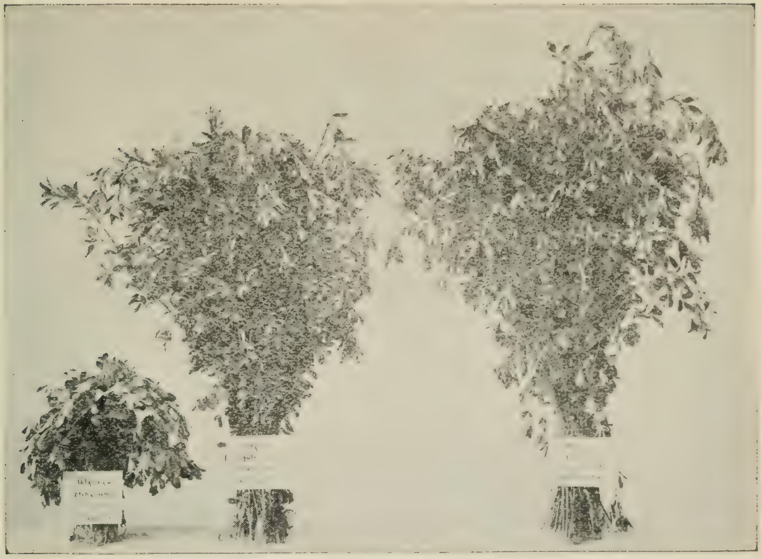


Fig. 20.—Showing growth of alfalfa on May 26, 1906, at the time of the first cutting. The fall seeded alfalfa nine months from seeding, is nearly as large as on the two-year-old fields.

PREPARING THE SEED BED AND SEEDING

To prepare for alfalfa seedings, the land should be disked and harrowed thoroughly immediately after plowing. Then work it every ten days or two weeks, or at least after every rain until the seed is sown.

Ten of Iowa's most successful alfalfa growers in reporting their methods, say: "It is absolutely necessary to work the ground well previous to sowing," in order to conserve moisture and get rid of weed seed. It is necessary to disk and harrow, as one said, "until you are weary."

When August seeding is practiced this cultivation should begin as soon as the preceding crop is removed. In case that no crop is sown in the spring, the land should be worked well throughout the entire summer. The necessity of thoroughness in this preparation cannot be over-emphasized. Unless the land is prepared early in the summer and then a good mulch maintained, there will be great danger of a lack of moisture to insure germination. Then again, alfalfa will not fight weeds, and unless the soil is stirred often, in this way bringing the weed seeds to the surface and germinating them before the alfalfa crop is put in, difficulty and possible failure will result. Further, while the surface soil should be very well fined and loose, the sub-surface should be rather compact. Late and insufficient preparation means a loose seed bed with more drying out, and then in the winter great danger from heaving, with the loss of the whole crop as a result.

MANNER AND THE TIME OF SEEDING

The alfalfa seed should by all means be drilled in when possible, and should be placed from ½ to 1½ inches below the surface, depending upon the moisture and texture of the soil. If the seed bed is very well prepared there is great danger that the drill may run too deep. Use care to insure against this difficulty. To get the most uniform stand it is often advisable to go over the field twice, putting in one-half of the seed each time and crossing the field the other way the second time over. If drilling is impossible, the seed may be sown broadcast and harrowed in well, or even disked in. If this be done toward evening, then any moisture in the surface soil will help to secure germination.

There are in common use in Iowa, four methods or times of seeding alfalfa, which may be enumerated as follows:

1. Seeding in the spring with nurse crops.
2. Seeding in the spring or early summer without nurse crop.
3. Seeding in the late summer following the removal of some other crop.
4. Seeding in the late summer on summer-fallowed land.

SPRING SEEDING

Alfalfa may be seeded in the small grain in the spring in identically the same manner as red clover. The seeding will be more likely to succeed if the seed bed is well prepared the previous fall or early in the spring.

Barley, wheat or rye make better nurse crops that oats. The oats require more water; they produce much foliage which tends to shade and "smother," and they come off of the ground late, when the season is likely to be dry and the sun burning hot.

Whatever small grain is used, its rate of seeding should be reduced from a third to a half. This will cut down the yield of small grain comparatively little, while it will give the alfalfa a much better chance.

Fig. 21.—A perfect stand; vigorous growth, and not a weed in the field. Seeded the middle of August in the extreme northern part of the state. (Kossuth county.)

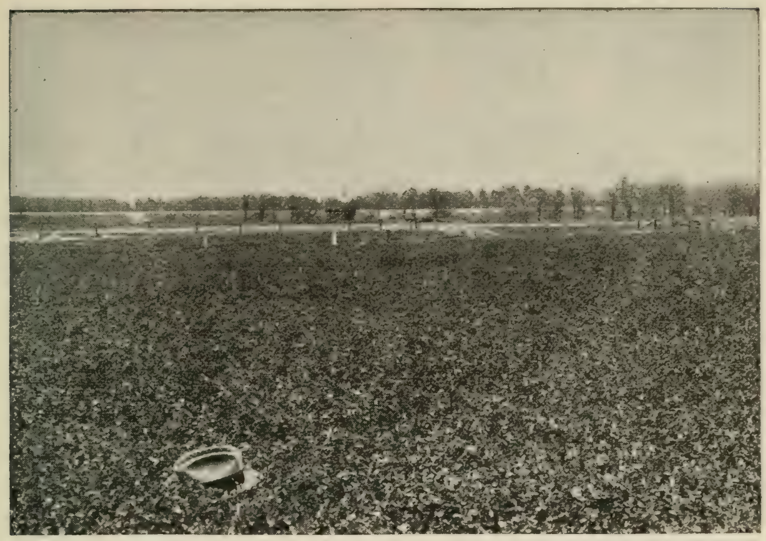


Fig. 22.—A perfect stand of alfalfa on the college farm without a weed in the entire field. Seeded the middle of August, 1912, on summer fallowed land.

When alfalfa is seeded in the spring the weeds are likely to be very troublesome unless the ground is very clean, owing to previous cultivation. The use of a nurse crop tends to keep these weeds in check until the alfalfa seed has had a chance to get a start. It is true that the nurse crop takes much of the moisture and plant food which would go to the alfalfa were it seeded alone, and it also tends to shade and smother it. However, this smothering can be checked by regulating the rate of seeding of the nurse crop, while the smothering of weeds cannot be controlled if no nurse crop is used. The fact that the alfalfa can be put in at little or no extra expense aside from seed is an added advantage of seeding with a nurse crop. Moreover, it is not necessary to give up the use of the land for a whole season in order to get the alfalfa established.

SPRING SEEDING WITHOUT NURSE CROP

The second method, in more or less common use, is to seed in the spring without a nurse crop, usually seeded later than the ordinary time for seeding small grain. When this method of seeding is used, it is very important that the land be worked thoroughly for some weeks in advance of seeding, so that as many as possible of the weed seed in the soil may be sprouted and killed, or else that the alfalfa be seeded very early.

In all cases when alfalfa is to be seeded in the spring, the land should be manured and plowed in the fall, as the preparation will add very materially to the chances of success with the crop.

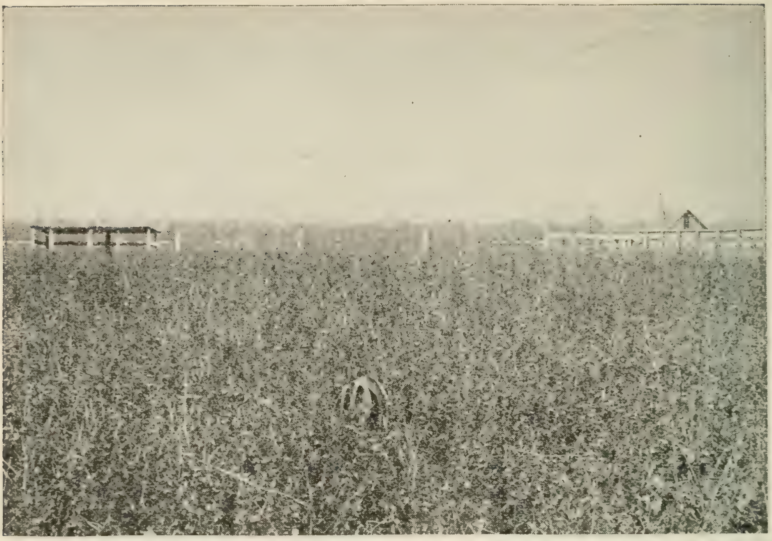


Fig. 23.—A perfect stand was secured in August, but as there was not sufficient time after plowing to get the weed seed germinated before seeding, the alfalfa was weakened, and in places killed by weeds.

Reports regarding the time and methods of seeding used, and the results secured under various conditions, have been secured from a number of growers; but since all did not give information on the same phases of the subject it has been impossible to use many of these in considering certain operations.

Of 43 men who reported seeding in the spring, 27 indicated whether or not a nurse crop was used. Of the 20 seedings made with a nurse crop, 80 per cent were successful as compared with 71 per cent successful when seeded without a nurse crop.

TABLE XIX.

Seedings With and Without a Nurse Crop.

	No. of Reports	Per Cent Successful	Per Cent Failed
With Nurse Crop	20	80	20
Without Nurse Crop	7	71.4	28.6

The main advantages in spring seeding where this is satisfactory, are first, that less labor is required and second, that there is a greater likelihood of plenty of moisture. The chief disadvantage is that the weeds are sure to be more or less troublesome by crowding and smothering the alfalfa.

The yield of hay the first season cut is no larger from spring seeded than from late summer seeded alfalfa. While in certain sections of the state almost universal success has been secured from seeding in the spring with a small grain crop, we believe that when the work is thoroughly done the greatest success is had on most soils from late summer seeding.

LATE SUMMER SEEDING

On most Iowa soils, the surest method of securing a stand is to plow in the spring or the preceding fall and summer-fallow the land; then seed the middle of August, having turned under a good application of manure, and worked in lime and inoculated soil. This statement is substantiated by extensive observations and by a large number of reports from practical men over the state.

TABLE XX.

Spring and Late Summer Seeding Compared.

Time of Seeding	No. of Reports	Per Cent Successful	Per Cent Partially Successful	Per Cent Failures
Spring	43	67	10	23
Late Summer	55	76	15	9

While this method costs more in labor than some of the other methods, it is also true that often the yield the following year is considerably greater.

If the work is thoroughly done and the land cultivated repeatedly throughout the summer, there is little chance of failure of the alfalfa seedings, even in very dry seasons such as those of 1910 and 1911. In fact during these dry summers when 90 per cent or more of the clover seedings were lost, by far the larger part of the alfalfa seedings made in this way were successful.

If alfalfa seeding is to follow the removal of a winter wheat crop, an early cutting of red clover or oats cut early for hay, the land is prepared much as though for summer fallowing. It is very important that the crop be gotten off the land at the earliest possible date, manure applied and the land disked and plowed. This method has been used more generally than seeding on summer fallowed land. When the work has been thorough and commenced as early as possible, it has been very satisfactory except in seasons of very low rainfall. Nearly all seedings made in this way in 1910 were successful, as were also many of those made in 1911. The summer fallow is, however, considered as the surer, when the work is thorough.

The chief advantage of fall seeding lies in the fact that the land may be quite well freed from weeds before the alfalfa is sown. The main disadvantages are that more work will be required to keep the land in such condition as will insure a sufficient supply of moisture, and also that insect ravages are likely to be more fatal to August seedings.

ALFALFA SEED

In buying alfalfa seed the highest priced seed is very often the cheapest. Most seed companies handle several grades varying much in quality, purity and germination. Samples and prices may well be secured from several seed companies before buying and the best selected for planting.

How the value of seed varies according to the per cent germination and foreign matter is shown in table XXI.

TABLE XXI.

Alfalfa Seed Value as Influenced by Purity and Germination.

Market Price Per 100 lbs.	Per Cent Germination	Per Cent of Foreign Matter	Value Per 100 lbs.
$22.00	100	0	$22.00
22.00	100	5	20.90
22.00	95	5	19.85
22.00	90	0	19.80
22.00	85	10	16.83
22.00	80	0	17.60
22.00	70	15	13.09
22.00	60	00	13.20

There is a much greater loss in using seed of poor quality, than in the price of the seed. This comes in the labor thrown away, the stands lost and the yields sacrificed by its use, as well as the ultimate expense of eradicating foul weeds which are introduced. The Iowa Agricultural Experiment Station last July examined a sample of alfalfa seed sown by a correspondent which contained, though its general appearance was very good, 6 per cent of clover dodder. The correspondent states, "It seems as though every alfalfa plant in the field has a dodder on it." The loss from using this seed will probably total several hundred dollars. While good seed may be secured from reputable dealers outside the state, there is less danger of getting poor seed when purchased in Iowa, as this seed is subject to a state pure seed law.

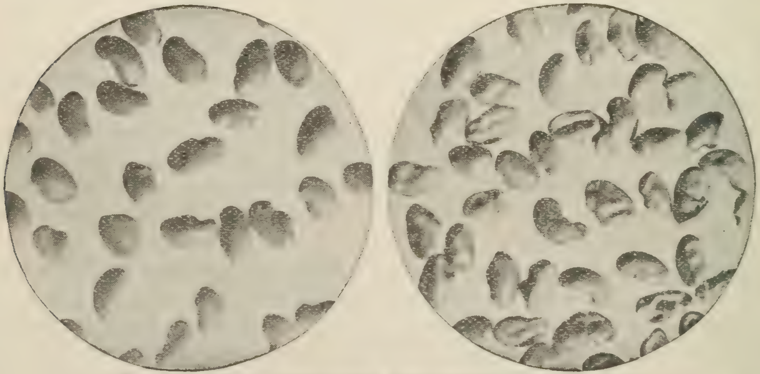


Fig. 24.—High-grade and low-grade alfalfa seeds.

High-grade seed. Smooth, plump and uniformly olive green in color. This is the kind of seed to buy.

Low-grade seed. While free from weed impurities, the shrunken, discolored brownish seed means low vitality.

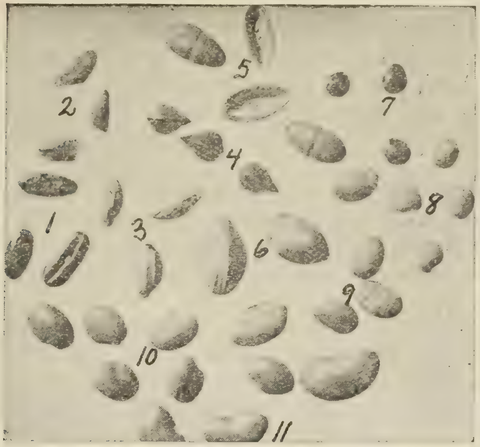


Fig. 25.—Impurities and adulterants most commonly found in alfalfa seed: 1. Buckhorn (Plantago Lanceolata) 3 seeds. 2. Broad Plantain (Plantago Major) 3 seed. 3. Green Foxtail (Chaetochloa viridis) 3 seed. 4. Curley Dock (Rumex crispus) 3 seed. 5. Bracted Plantain (Plantago aristata) 3 seed. 6. Yellow Foxtail (Chaetochloa glauca) 2 seed. 7. Pig Weed (Amaranthus retroflexus) 3 seed. 8. Clover dodder (Cuscuta Epithymum) 4 seed. 9. Yellow trefoil (Medicago Lupulina) 4 seed. 10. White Sweet Clover (Melilotus Alba) 7 seed. 11. Bur Clover (Medicago Menticulata) 3 seed.

The Experiment Station stands ready at all times to test for farmers, free of cost, any sample of seeds.

RATE OF SEEDING

Twenty pounds of alfalfa seed per acre is usually considered the safest amount to use. Something like 73 per cent of farmers reporting on the rate of seeding used 20 pounds per acre, 12 per cent used less, averaging 17 pounds, and 15 per cent used more, averaging 22 pounds per acre.

When a good quality of seed is used and put in with a drill, 20 pounds per acre may be too much, as this will place about 100 seeds on each square foot of ground. After alfalfa is well set, ten plants to a square foot is enough to give a yield of from 4 to 6 tons per acre. However, in the first year after seeding, before each plant is thoroughly established, a small number of plants per acre would mean a comparatively low yield. The increased cut from the first year's crop will probably more than pay for the additional seed used in the heavier rates of seeding. A number of tests show this, but more are necessary before a definite statement can be made regarding our Iowa conditions. Fred Woolley, of Garden Grove, Iowa, who is trying to replace red clover with alfalfa in a regular four years' rotation, reports a good stand when seeding as little as 6 pounds of alfalfa seed with the oats in the spring. Others report that they prefer to use more than 20 pounds per acre rather than less. Too thick seeding may so crowd the plants as to weaken them.

When the rainfall is exceedingly low or where the alfalfa is to be cut for seed a very much lighter seeding is to be recommended; 4 to 12 pounds per acre being sufficient.

CARE OF THE ALFALFA FIELD

When alfalfa is seeded in the spring it is the common practice to go over the field several times during the summer with a mower, if necessary, clipping the weeds so that they do not "smother" the young plants. The sickle-bar should be set high, close cutting at this time often kills the crop.

No hay crop should be removed the first year unless an early seeding on a very rich soil has produced an especially rapid growth and the alfalfa has come into bloom by the last of August. It is usually considered safest to leave a good growth on the ground as a cover during the winter.

A few men report that they cut the last crop after the first fall frost, the fields going into the winter practically bare, and yet apparently they did not lose by doing so. On still other fields, however, portions cut late in this manner were either seriously damaged or entirely lost by winter killing. We, therefore, do not recommend this practice.

Late summer seeded alfalfa needs no attention the first fall, the entire growth being left as a winter cover. The following year the crop should yield three or four good cuttings.

CULTIVATING THE ALFALFA FIELD

It has been repeatedly demonstrated that the thorough cultivation of alfalfa is very beneficial. This is partly because many weeds which otherwise compete for plant food and for moisture are destroyed, and partly because this cultivation tends to conserve moisture. Some say that cultivation is beneficial in splitting the crowns, thus forming two plants from one and giving a better stand with a heavier and finer growth of hay.

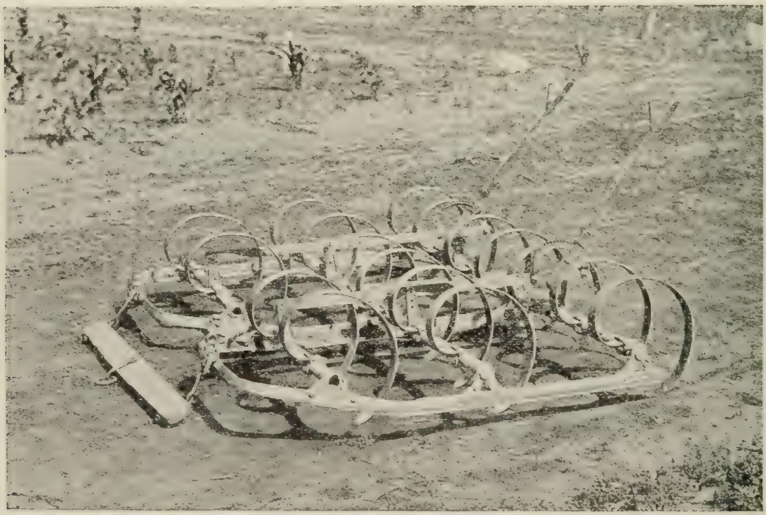


Fig. 26.—Spring tooth harrow—one of the most valuable all around implements on the farm, and a most excellent alfalfa cultivator and renovator.

A number of the most successful growers report that they disk their alfalfa every spring. Still others disk after the second and third cuttings.

The ordinary disk has no doubt been used more generally for this purpose than any other implement, but it is not nearly so good an implement as the spring-tooth harrow or the alfalfa renovator. While independent plants sometimes develop from portions of the crown of the alfalfa which are cut off by the disk, this hardly happens often enough to be of great value in thickening the stand, while the plants may be injured by presenting a favorable opening for fungus diseases. Whatever benefit is derived from cultivation with the disk is due to other factors than that of an increased number of plants.

The spring-tooth harrow, constructed of stiff springs ending in small shovels, which are in continual vibration as they pass through the soil, is very efficient in removing the weeds and grass, without in any way injuring the alfalfa plants. Weeds and grass are shallow rooted and are easily pulled up. Alfalfa roots penetrate many feet into the soil and when the narrow shovel of the spring-tooth harrow comes in contact with them, it springs far enough to one side to pass the plant without injuring it.

Sometimes the desired results are not secured from cultivation because the work is not thorough enough. Many times the man doing the work is afraid of injuring the alfalfa. We have cultivated alfalfa until it seemed that no living plant could remain, and until the field appeared to be a perfectly prepared seed bed, yet the old crowns threw up new shoots and before frost the alfalfa stood 14 inches high, 4 inches higher than other alfalfa on the same field which had not been cultivated. This increased vigor was due in part to the fact that where the alfalfa was not cultivated the grass was crowding it badly, while on the cultivated portion no weeds were to be seen. Ordinarily we would not recommend so severe treatment as this, but we do wish to impress the necessity of thorough cultivation.

A correspondent states that on one occasion he disked an alfalfa field thoroughly and seeded it to oats, thinking that the alfalfa was practically gone. Later the alfalfa came on so vigorously as to crowd out the oats, making an excellent growth of alfalfa which was cut for hay. Since then his alfalfa fields have been thoroughly disked to very good advantage, practically every year.

It is true that excellent stands of alfalfa have been maintained for several years without cultivation, but the blue grass is likely to be found very troublesome after two or three years. This will be found especially true if the alfalfa is pastured at any time.

TOP DRESSING

Much benefit has accrued from top dressing the alfalfa field with a good grade of manure, 4 to 6 tons an acre, late in the fall. If this can be scattered with a manure spreader the results will be more satisfactory. Plats treated in this way have given a much greater yield of hay than other parts of the same field not treated.

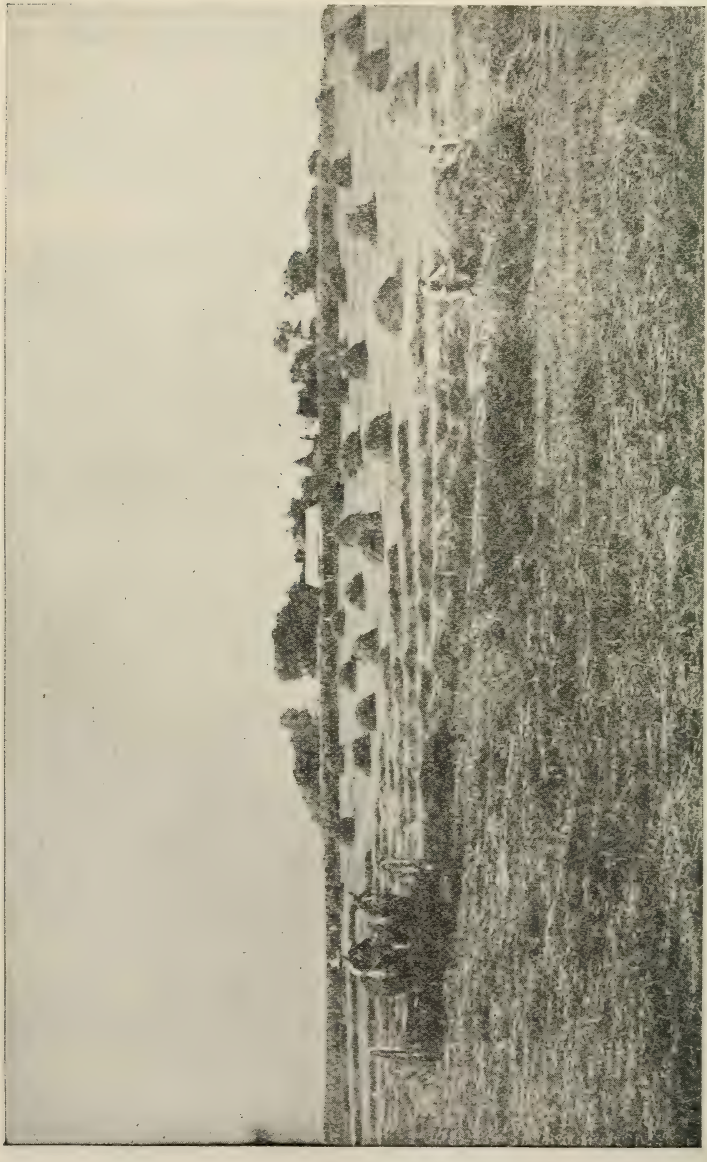


Fig. 27.—"We leave it lying in the swath for about half a day or until it wilts, and then rake and cock."

HANDLING THE CROP

TIME OF CUTTING

Alfalfa should be cut for hay early in the blooming period (when it is from one-tenth to one-fourth in bloom). When cut at this time the following growth comes on more quickly than when cutting is delayed. Moreover, hay of better quality is secured as fewer of the leaves are lost in curing.

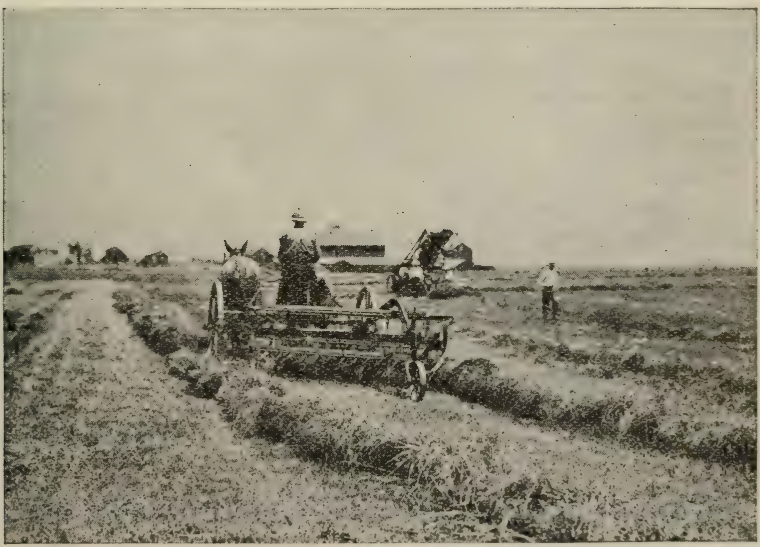
When the plant approaches maturity new shoots are thrown out from the crown. As the growth in these shoots is very much more rapid than in the older parts of the plant, the annual yield of hay is reduced by any delay in cutting. Also if cutting is delayed until these new shoots have made such a growth that they will be cut off, the growth of the next crop will be seriously checked.

In Iowa the first cutting will be ready for the mower early in June. The average date of this cutting at the Iowa Agricultural Experiment Station has been June 15. The earliest cutting was in 1911, June 5, and the latest in 1907, June 25.

The date of the first cutting may sometimes be deferred somewhat by pasturing early in the spring. A number of correspondents state that this practice has given them better weather for curing hay and has not injured the field or noticeably decreased the yield.

CURING THE HAY

One common objection to the alfalfa crop is the difficulty of curing the hay, especially the first cutting, which usually comes near the middle of



Courtesy International Harvester Company.

Fig. 28.—The side delivery rake is considered the most important implement in the economical making of alfalfa hay of good quality on a large scale.

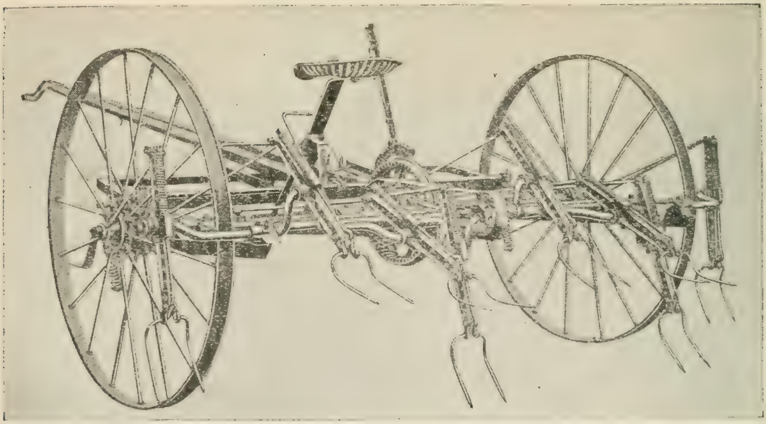


Fig. 29.—The hay tedder sometimes hastens the curing of the hay by lifting it from the ground so that the air gets through. It must be used before the leaves have begun to dry. Some follow the mower at once with the tedder, in some cases going over the field three times, but stopping as soon as the leaves begin to break.

June. Because few alfalfa growers mention such a difficulty, we are led to believe that this objection has been over-emphasized. Even though an occasional cutting may be badly bleached and washed with rain in curing, it is still of greater feeding value and more palatable than any other feed on most Iowa farms.

To learn the actual experience of men who handle large acreages, inquiry was made of a number who had not expressed themselves upon this phase of the subject. The findings of this inquiry may be presented as follows:

Source of Information; County and Correspondent

Woodbury County	F. A. S.
Cherokee County	A. T. Z.
Plymouth County	W. B.
Woodbury County	W. S. A. S.
Plymouth County	G. W. W.

1. Question: How long have you grown alfalfa?

Answer: "Fourteen years." "Seven years." "Ten years." "Fifteen years." "Three years."

2. Question: How long do you leave fields in alfalfa?

Answer: "As long as it does well." "Four years." "Permanently." "Five to seven years."

3. Question: Your present acreage in alfalfa?

Answer: "Fifty acres." "Twenty-one acres." "Twelve to fifteen acres." "One hundred and ten acres." "Sixty acres."

4. Question: Your greatest acreage at one time?

Answer: "Fifty acres." "Twenty-one acres." "Twelve to fifteen acres." "One hundred and forty acres." "Ninety acres."

5. Question: Do you find it very difficult to cure the first crop of alfalfa?

Answer: "No." "Not particularly." "Yes, on account of rain." "Hard to get bright color but never a loss." "No."

6. Question: Is it more difficult to cure alfalfa than to cure red clover?

Answer: "No." "Not more so than heavy crop of red clover." "I do not know. Never grew any red clover." "Very much easier to cure than red clover; generally have both and there is no comparison." "No, it cures quicker."

From these answers it will be seen that these men, who had been growing alfalfa for from three to fifteen years and whose average acreage had been 62.9 acres each, do not consider the alfalfa hay crop harder to cure than other crops more generally grown and recommended. The emphatic statement of one correspondent with 140 acres, that after having grown both alfalfa and red clover for years he considers it very much easier to cure alfalfa hay than to satisfactorily cure red clover, may appeal to some as rather sensational and is certainly contrary to the more or less theoretical views which are sometimes expressed.

These men's years of experience have been of much value in determining practical methods by which they can secure most uniformly good results under our Iowa conditions.

The methods of curing alfalfa hay in use by them, as told in their own words, in answer to the request:—State carefully your method of handling, curing the first crop, time of cutting, raking, bunching, cocking, etc., follows:

"What is cut in forenoon is raked first thing afternoon. In case of strong sun and very warm day, I commence raking about two hours after being cut and commence to bunch up and cock immediately after; leave in cocks two or three days, then put in stack using wide tired wagons. I never allow alfalfa to dry so as to lose any of the leaves or color and it always comes out of stack nice and green."

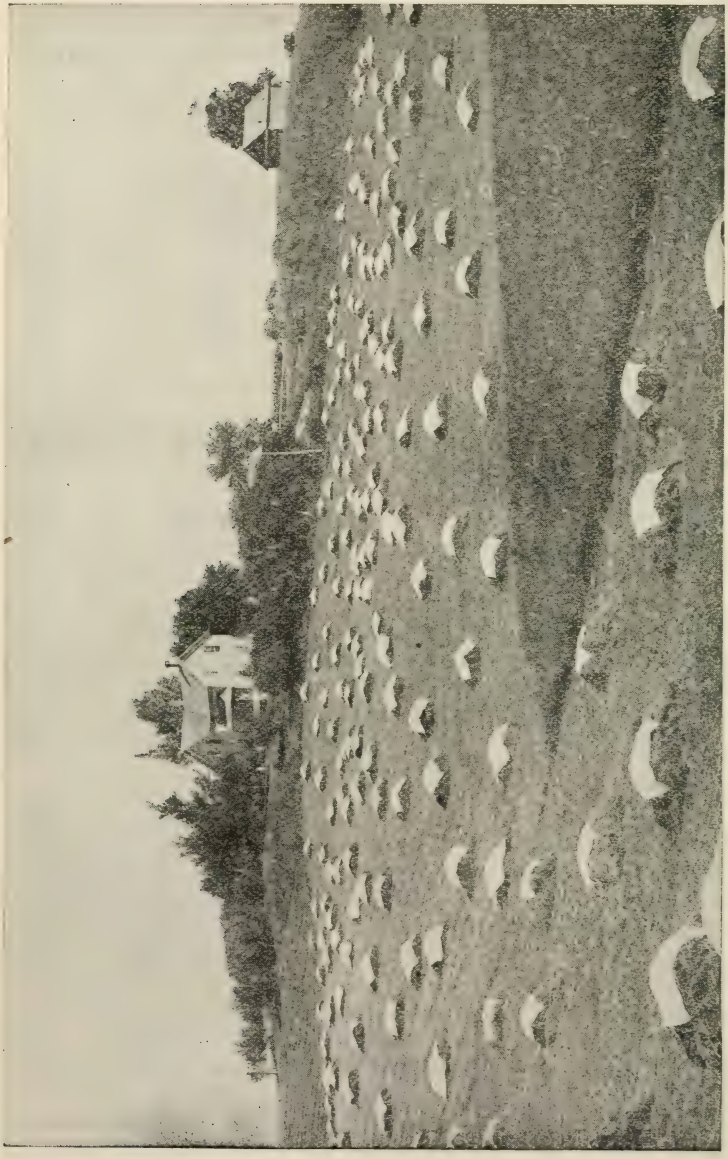
"We handle alfalfa very much the same as clover. Usually cut first crop between June 3 and 15, according to season. Follow Joe Wings' method of determining when alfalfa is ready to cut. Cut when new shoots are started regardless of condition of bloom. We cut the alfalfa and allow it to wilt in the swath, and rake in light windrows before the leaves are dry enough to crumble and as soon as sufficiently dry to stack or put in mow it is bunched with hay-rake and pitched on wagons and hauled to barn or stack.

"Of course, the weather sometimes interferes with our plans for handling alfalfa, but this is the method we follow when it is possible."

"We do not practice cocking. It seems to take a long time to cure the alfalfa in cocks."

"We always try to bunch alfalfa with the rake when it is tough enough so that the leaves will not be lost."

"From the first of June, I just cut as much at one time as I can haul in a day; then when it is dry enough—say if it is drying weather, I let it dry a day and a half—bunch it and haul it in right away and put in a barn for I have no luck stacking out-doors."



Courtesy South Dakota Improved Seed Company.

Fig. 30.—While most of our alfalfa hay is cured without cocking, yet a number of men report the quality and value of the hay is sufficiently increased by this practice to make it desirable. Danger from loss in curing can be reduced practically to the zero point by the use of hay covers.

"It is impossible properly to cure first cutting if raked with an ordinary rake, but where the side-delivery rakes are used and we have sun, the hay is raked after cutting and often stacked—in the windrows it can lay day or two without hurting. If stacked with swinging stacker stacks will never spoil as the dump is in the center of stack. The overshot stacker is not good for alfalfa unless the stacks are covered. We often cover with green weeds and let them mould on top of stack.

"If we are so unfortunate as to get the hay wet, which is generally the case with the first cutting, we let it lie until fairly dry on top, then turn over with side-delivery rake and stack in an hour or so, aiming not to turn more than we can stack, as continual turning with side-delivery rake twists it up. Never shake it out to dry as too many leaves are lost.

"I have never seen any difference in choice of the cattle. They seem to eat the brown hay which has been wet just as well as the green nicely cured hay providing the leaves are kept on. I have hay now cut five days and it has rained ever since cutting, which will make good hay as it is in the windrow. If left in swath a few hours sun would have made it so brittle the leaves would have dropped off."

"We start cutting the first crop about the time it starts to bloom and leave it lay in the swath about half a day, or until it wilts, and then rake and cock and leave until dry and stack. The second crop is ready to cut about three weeks after the first. The third about the first of September. If the season is late we get a fair fourth crop."

Three factors in curing hay are of prime importance and largely determine the value of the product. They are:

1. That it shall be cured with the loss of as few leaves as possible.

2. That it shall be placed in the barn or stack without being washed with rain or dew.

3. That it shall retain as much of its natural color as possible.

It has been determined that the food value of the leaves is exceptionally high, in that they are very palatable, very high in protein content, and also that this protein is very highly digestible.

Hay washed with rain has a lower feeding value than hay cured without wetting, as the rain actually carries away some of the more soluble food elements.

Good color is of prime importance in making hay. The bleaching of hay lessens its palatability, as its pleasing odor is largely lost.

Danger of loss in curing alfalfa hay may be reduced by using covers.

SHRINKAGE OF HAY IN CURING.

The yields of alfalfa hay on various plots have been reported in tons per acre of field cured hay, since this will be the character of the hay used by practical growers in making comparisons. It is recognized, however, that there is considerable shrinkage between the time the hay goes into the barn and when it may be fed. A very wide range of variation has been found in this shrinkage, depending upon the degree to which the hay has been cured in the field. Different plats cut and hauled on the same days may vary as much as 20 per cent in shrinkage, the hay handled early in the day possibly containing twice as much moisture as that hauled in the afternoon. As an average the cured hay will shrink from 20 to 30 per cent of field cured weight.

SILAGE.

It is claimed that the first cutting of alfalfa might well be put in the silo, as in this way loss due to unfavorable weather at the time of curing could be largely eliminated. As yet but a small per cent of our Iowa farms are equipped with silos, and those who have them will find corn the best crop with which to fill them. The palatability and nutritive value of alfalfa is not increased in any such degree as is corn when made into silage.

While a very nutritive silage has sometimes been made from alfalfa the palatability is likely not to be good, owing to too much acid and a disagreeable ordor. This is especially true when the alfalfa is cut at the stage of maturity usually recommended for hay making. When alfalfa is to be put in the silo it should be more fully mature before cutting, and should then be hauled just as soon as possible.

ALFALFA PASTURE.

Alfalfa from its habit of growth, is, generally speaking, not a good pasture crop. Grasses make their growth at the base of the leaves, while alfalfa grows from terminal buds and when they are eaten off the plant makes very little or no growth until new buds can be formed. As a result, a small patch of alfalfa pastured close is of comparatively little value. A combination of pasturing and mowing is most satisfactory. A large field which is to be cut regularly for hay can very economically be pastured with hogs throughout the season. The pasture should at all times be under-stocked.

Alfalfa pastured without cutting usually becomes very much spotted, weeds and grass coming in, and making it necessary to plow up in a very few years.

There is always some danger in pasturing sheep and cattle on alfalfa, as it is very likely to cause bloat. This danger is much increased when pasturing young alfalfa or alfalfa on moist or fertile soil, which is making rapid growth. Animals should not be turned on alfalfa when hungry and at least with sheep and cattle the alfalfa should be well advanced towards blooming.

Animals must never be allowed on the alfalfa when frozen or muddy; else the alfalfa will be greatly injured.

Thorough trials with alfalfa as a pasture for hogs are reported in the Iowa Agricultural Experiment Station Bulletin No. 136, "Forage Crops for Swine."

ALFALFA IN ROTATION.

Objection is often made that alfalfa does not fit well into a rotation; that it demands too long a use of the land in getting established, and that seedings are too likely to be lost.

On land well adapted to its growth alfalfa establishes itself as soon as red clover, and the first year after seeding yields practically twice as much hay, of far better feeding value. What practical growers say about it being easier in their communities to get a stand of alfalfa than red clover, will probably be found true in the greater part of the state.

Without question there are many reasons why red clover is preferable in short rotations, and it is a very satisfactory crop where a stand is easily secured. But there are many parts of the state where clover is little grown because even in average seasons most of the clover seedings made with the small grain in the spring fail. Many reports from every section of the state indicate that of all clover seedings made during the past six or seven years something over 60 per cent have been lost. These estimates are influenced to some extent by the unfavorable clover years of 1910 and 1911. Compare this record with that of the alfalfa. Of more than 1,000 seedings of alfalfa on various soils in different portions of the state only 12 per cent were lost. The conclusion is clear that the use of alfalfa in regular rotation should be encouraged.

Where alfalfa is substituted for red clover in the regular four year rotation it may be plowed up as red clover would be at the end of one year, or, it may continue a second year with greater profit. Corn and alfalfa make an unusually good combination for feeding live stock so in Iowa alfalfa is entitled to special consideration in fixing the rotation.

A profitable short rotation is corn one or two years followed by wheat, the stubble to be plowed and sown to alfalfa, then alfalfa two years. This rotation would work best on the smaller farms where a silo would take care of the corn crop in time to put in winter wheat. Otherwise oats may be used, though with less profit than in the former combination. The corn crop would best be cut in order to sow the wheat; though in many seasons wheat can be put in the standing corn to good advantage and at little expense.

To get the best results with alfalfa, however, a considerably longer rotation will be necessary, something like these:

Rotation No. 1. Corn, Corn, Winter Wheat, Alfalfa 2 to 4 years.

Rotation No. 2. Corn, Corn, Oats, Alfalfa 2 to 4 years.

Rotation No. 3. Corn, Corn, Oats, Red Clover; for 12 years, then Alfalfa for 4 years.

Rotation No. 4. Corn, Corn, Oats; for 12 years, then Alfalfa 4 years.

One hundred acres devoted to rotations Nos. 1 and 2 with alfalfa down for 2 years would contain, corn 40 acres, small grain 20 acres, alfalfa 40 acres.

This would certainly be a very much more profitable rotation than many now in operation.

Rotation number 3 would be especially desirable for building up the fertility of the soil and at the same time increasing the value of the crops produced in the rotation. It will be observed that during the 16 year period the land will be in legumes for 7 years, in corn 6 years and in oats, the least profitable crop, for but 3 years.

Using rotation number 4 the land will be in alfalfa one-fourth of the time. The distribution of crops on the various fields as illustrated in table XXII.

TABLE XXII.

Showing the distribution of crops to various fields in a 16 year rotation of corn, corn, oats; 12 years, then alfalfa 4 years.

Year.	Field A.	Field B.	Field C.	Field D.
First	alfalfa	oats	corn	corn
Second	alfalfa	corn	oats	corn
Third	alfalfa	corn	corn	oats
Fourth	alfalfa	oats	corn	corn
Fifth	corn	alfalfa	oats	corn
Sixth	corn	alfalfa	corn	oats
Seventh	oats	alfalfa	corn	corn
Eighth	corn	alfalfa	oats	corn
Ninth	corn	corn	alfalfa	oats
Tenth	oats	corn	alfalfa	corn
Eleventh	corn	oats	alfalfa	corn
Twelfth	corn	corn	alfalfa	oats
Thirteenth	oats	corn	corn	alfalfa
Fourtenth	corn	oats	corn	alfalfa
Fifteenth	corn	corn	oats	alfalfa
Sixteenth	oats	corn	corn	alfalfa

For each one hundred acres devoted to this rotation there would be each year 50 acres of corn, 25 acres of oats and 25 acres of alfalfa. Reports from practical farmers as recorded elsewhere in this bulletin indicate that even a much larger acreage than this can be properly taken care of on an average farm.

With this rotation it will be observed that any particular field, as A or D, for example, will be in corn and small grain continuously for 12 years, after which it will be in alfalfa for 4 years. A short rotation of corn, corn, and oats will be repeated 4 times in the 12 years. With this rotation a legume is grown one-fourth of the time, which is exactly the same condition that is found in the more common rotations of corn, corn, oats and clover. This rotation has an advantage over the common rotation of corn, corn, oats, clover, in which a seeding of clover has to be made every year, in that the alfalfa will not be plowed up until after the new stand of alfalfa is assured. The fact that clover is a biennial makes necessary the plowing of this land after one season's cutting and as approximately 50 per cent of the clover seedings in the state fail on the average, the rotation is continually being disarranged.

The rotations mentioned may be modified in any way to suit local conditions. In some parts of the state the introduction of winter wheat may be very desirable; while potatoes may also enter into the rotation very acceptably. A rotation of corn, oats, clover, wheat or corn, corn, oats and clover might be used to advantage. As suggested this latter rotation for 12 years followed by four years of alfalfa would certainly be very desirable from the soil fertility standpoint, and we believe would prove very profitable and practical by materially increasing the yield of other money crops.

While it is true that an alfalfa field may be kept very productive for a series of years by proper treatment, yet it is very doubtful whether this is desirable or most economical unnder our Iowa conditions.

The experience of every grower of alfalfa demontrates that soil is very much more productive following an alfalfa crop than before. Some of those men who have been growing alfalfa longest, even upon compara-

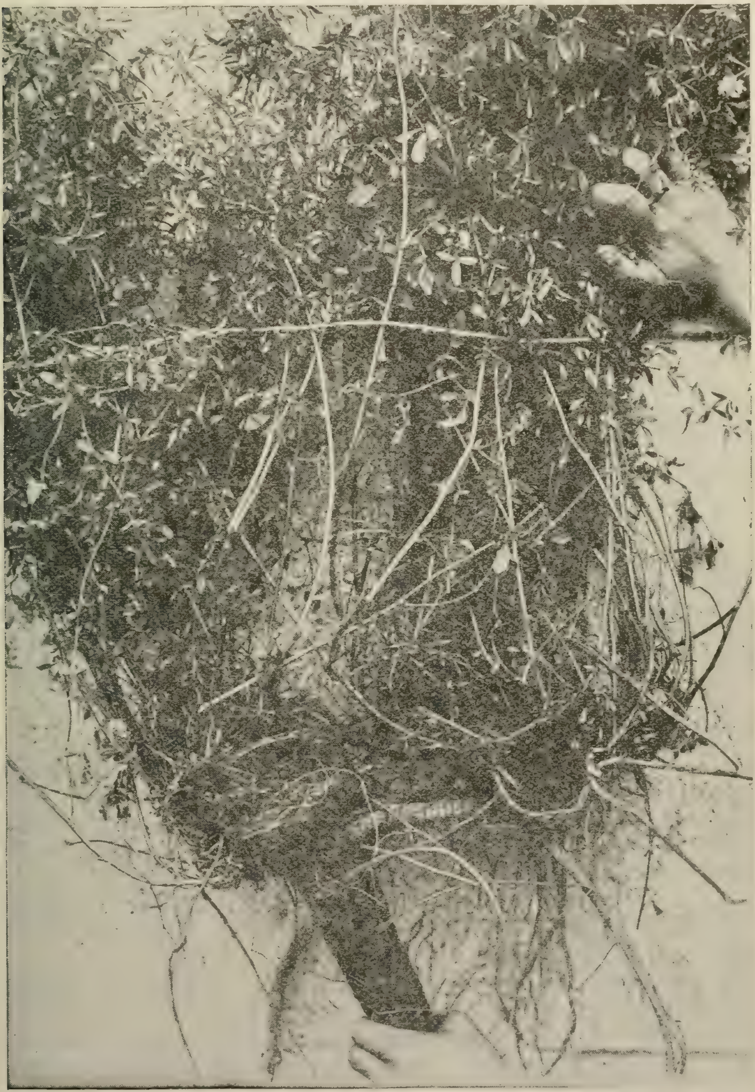


Fig. 31.—Showing the size of the main tap root, and the crown of an old alfalfa plant, produced at Ames, Iowa. Notice how the crown has branched and spread until the width of the one plant is over 18 inches.

tively poor soil, have produced what must be considered enormous corn crops in comparison with the average yield for the state.

Therefore we believe that alfalfa should be plowed up at least at the end of the 5th or 6th year, since with the proper care and management the greatest yields are probably secured during the 2nd, 3rd, 4th, and 5th seasons.

DURATION OF ALFALFA

Since alfalfa is a perennial it will grow continuously for many years from one seeding, provided the soil and climatic conditions are favorable. These conditions are ordinarily most likely to be found in the West and Southwest. There is record of fields in Mexico which have been in alfalfa for over 60 years and probably over 100 years and are now annually producing as good crops as ever. Fields in Montana have continuously produced alfalfa for over 40 years from one seeding.

But these fields are not all confined to the West, for in South Carolina one field has been cut continuously for 60 years, another in New York has been in alfalfa for 45 years and one in Minnesota for 35 years.

The virgin soils of Iowa were from the beginning given over more uniformly to the production of the special cereal crops, wheat and corn, and as a result the legumes such as alfalfa did not receive general attention here as early as in some other states. But even in Iowa fields have been in alfalfa for over 20 years and one seeding at Burlington has persisted for something like 35 years.

As a general rule, however, in the humid sections of the country alfalfa makes its best yields during the second, third, fourth and fifth years; and since there is great advantage to be gained by including alfalfa in rotation with other crops, since these crops will be greatly benefited through the increased fertility of the soil, a new field should be seeded down at least every sixth year and the old field plowed up and put to corn.

VARIETIES OF ALFALFA.

During many centuries of alfalfa growing in various parts of the world, under widely different conditions, a number of types have naturally developed and come to be known as varieties. The uniformity of the plants within any particular type depend more or less upon the length of time the variety was grown in a particular locality, with its particular climate and soil. If the time was long enough the plants became the best adapted to those conditions by a process of natural selection. The longer the time during which this natural selection took place, the more uniform is the resultant progeny.

We find very great differences in resistance to cold between the different varieties or types as well as in their ability to withstand drought. Variations are likewise found in the general habit of growth; the size, form and color of the leaves; the color of the flowers; and the general vigor of the plant.

Some of the more important regional types generally recognized in the United States today are the Turkestan, the Arabian, the Peruvian,

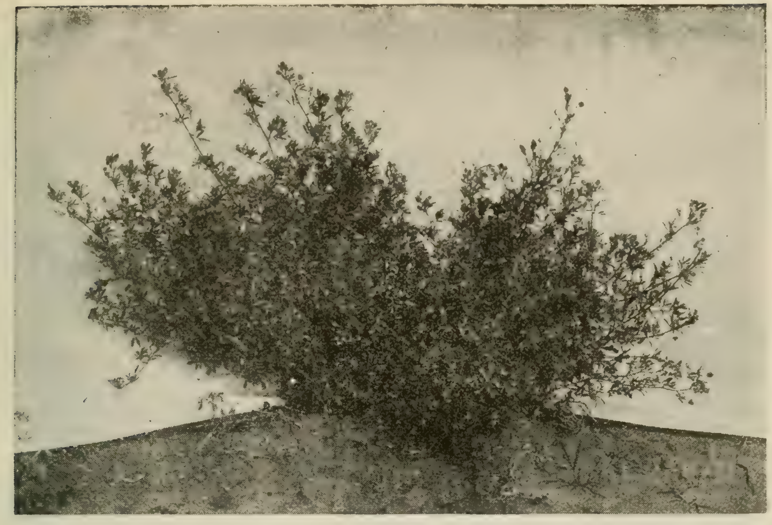


Fig. 32.—A good plant of Turkestan alfalfa in the breeding nursery at Ames.

the German, the Sand Lucerne, and the American or ordinary type. Other varieties which give perhaps greater promise of usefulness, especially in the Northwest, are the Grimm and the Baltic.

A number of species other than the common one (Medicago Sativa) have been introduced by the United States Department of Agriculture, some of which give promise of usefulness under certain conditions. A few of the more important of these are, Medicago Ruthenica, Medicago Media, Medicago Platycarpa and Medicago Falcata. All of these are being grown at the Iowa Station, though the trials have not progressed far enough to make definite recommendations concerning their value to our conditions in this state.

A brief statement of the characteristics of various varieties and regional types and their adaptions may be of value and is therefore included herewith.

Turkestan Alfalfa.—These alfalfas derive their name from the country from which they are introduced into the United States, and were among those varieties brought by the United States Department of Agriculture in 1898. Coming from a semi-arid region, the Turkestan alfalfa is very drought resistant and well adapted to the dry, non-irrigated portions of the West. This type in general appearance so closely resembles the common alfalfa that a trained botanist often finds it difficult and perhaps impossible to take up a particular plant and tell whether it is of the Turkestan or the ordinary American type. The chief difference between the two is the ability of the former to withstand the dry conditions found in such states as New Mexico and Colorado, as well as the even more unfavorable conditions due to cold, found in such regions as Minnesota, North Dakota, Wisconsin and Montana.

But in the more humid sections of the United States, particularly in the central states, where its special qualification of drought resistance is not ordinarily essential, the Turkestan is probably inferior to the common American alfalfa and is not to be recommended in preference.

Grimm Alfalfa.—The Grimm alfalfa is apparently the result of a natural selection in Carver County, Minnesota. Though it no doubt already had some very hardy qualities when it was first introduced into

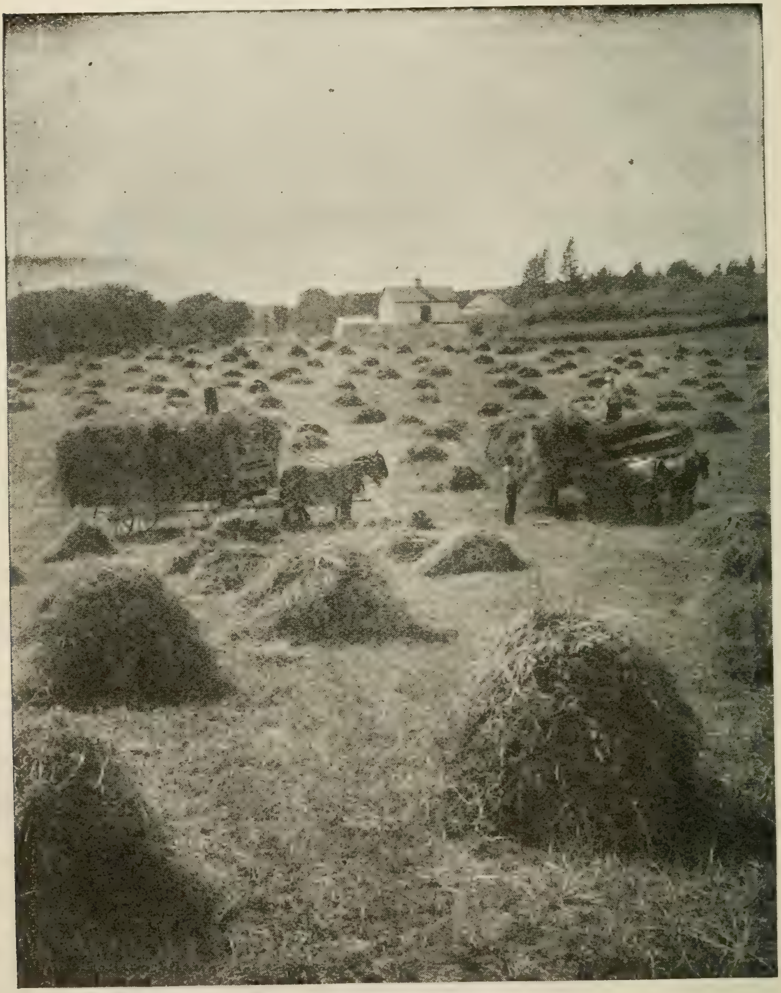


Fig. 33.—A field of Grimm alfalfa on the farm of A. B. Lyman, Excelsior, Minn. Showing the first crop summer of 1911. The crop was fully two tons per acre on this first cutting, while the yield of hay other than alfalfa was nearly a failure, because of the dry season. For a number of years, this field has annually produced three good alfalfa hay crops except when left for seed. In 1911 the value of hay and seed was over $100 per acre over and above all cost of labor.

that state, it derives its name from the man who brought it, in 1857, from Wertheim, Province of Baden, Germany, It was seeded upon Mr. Grimm's farm where it was grown continously for many years without much notice.

Gradually, however, farmers in the community came to realize that while other fields of alfalfa in the county were killed by the severe cold, the "Grimm alfalfa" survived. Many tests conducted since have shown it to be more immune to severe winters than almost any other type. The fact that it can be grown far north in exposed locations, where the ordinary type winter kills, is of great importance.

Under very favorable conditions and on very rich soil Grimm alfalfa may lodge more or less, though in the semi-arid regions in parts of the Dakotas and Montana this tendency has not been observed. It does not make quite so rapid or rank and vigorous a growth as the common American alfalfa and in an average season it may not give quite so heavy a yield of hay.

Arabian Alfalfa.—This type is more vigorous and productive than the ordinary alfalfa, but is unable to withstand the cold, and for this reason its successful growth is confined to such states as California, Texas, Arizona, New Mexico, etc. Here it is of special value, producing a more vigorous and productive growth than the ordinary alfalfa, with a more upright plant bearing larger stems with somewhat hairy leaves.

Peruvian Alfalfa.—This is another alfalfa introduced by the United States Department of Agriculture. It makes a very erect growth with stems larger and taller than the common American or the Arabian alfalfa, and is more productive than either of them. It produces fewer stems from each culm as a usual thing, but this is not objectionable where a good stand is maintained. Its value is limited in the United States since it lacks hardiness because of its development in the more temperate climates, and its growth is therefore necessarily confined to the warmer sections.

German Alfalfa.—The German alfalfa is somewhat similar in general habit of growth to the Turkestan, though the leaves are possibly a little broader and smoother and the stems a little more succulent. In comparisons of yield in the West, the German seems to be slightly superior to the Turkestan under favorable conditions, though not exceeding the American. It would seem that this alfalfa is apparently not so able

Sand Lucerne Alfalfa.—Botanically the Sand Lucerne is supposed to be a cross between the common alfalfa and the yellow Lucerne; it is probably hardier than the former. It has a wider range of adaption than ordinary alfalfa and may grow in the humid regions under conditions ordinarily unfavorable for the successful production of alfalfa.

Where alfalfa can be grown, however, the Sand Lucerne has no particular advantages, but rather is somewhat inferior. It has a tendency to lodge badly, especially when the conditions for growth are most favorable. The seed commonly offered on the market as Sand Lucerne is probably common alfalfa seed grown on sandy soils in northern and central Europe.

American or Common Alfalfa.—In order to distinguish it from the eastern types, this is often referred to as Western or Chilian alfalfa. Though somewhat less hardy than the Turkestan it is a more productive and vigorous plant than the German, and withstands cold better than the German or Eastern type, or the Peruvian or the Arabian. In northern states it is surpassed in hardiness by the Grimm and Baltic.

VARIETIES OF ALFALFA FOR IOWA.

There are one or two varieties hardier than the common American, but since there is apparently comparatively little winter killing reported in Iowa, we recommend for general planting, the common American type. Moreover, its seed is much less expensive than seed of the Grimm variety. Where alfalfa has been grown long enough on a farm so that there is a certainty of getting a stand and a particular field is to remain in this crop for a good many years, a farmer might be justified in paying a higher price for seed of the hardier strains.

Since it is quite impossible to distinguish Grimm alfalfa seed from seed of the common American type a great deal of common seed is sold at a high price under the name of Grimm—perhaps ten times as much as is ever produced. This fact should be considered before paying out money for "hardy" varieties. Great care should be exercised in order to be sure that one is getting what he pays for. If, however, the hardy varieties become grown commonly enough in seed producing regions as to lower the prices of seed they may be recommended for our conditions.

SEED PRODUCTION.

Economical seed production is considered possible only in those sections of the country or in those seasons which have but a slight rainfall. Therefore alfalfa seldom produces a seed crop in Iowa. In 1910 and 1911, however, seed was produced in this state, some reporting as much as 5 bushels per acre. With anything like a normal rainfall the plants make a heavy growth of foliage, and while many flowers may be formed, few develop seed pods. The excessive moisture in the soil brings on a new growth from buds or shoots which arise on the old shoots at the crown, and this second growth soon takes the supply of food and moisture which might otherwise produce a seed crop. With a small rainfall this new growth does not come on so quickly, and the flowers receive enough food to develop the seed.

When it seems desirable to attempt a crop of seed in the more humid regions the second or third crop is usually reserved for this purpose. Most favorable weather conditions for seed production and for harvesting are likely to occur late in the summer; also, the second and third crops mature more uniformly than the first.

When harvesting alfalfa for seed a mower with a bunching attachment is used. This attachment gathers the alfalfa as it is cut, deposits it in small piles from whence it may be threshed direct, if a huller is available, as soon as thoroughly dried. If it is impossible to get a huller or threshing machine when the crop is thoroughly dry, it is best to stack, as it is sure to be injured by rain if left in the field any length of time. In hauling, cover the wagon rack with heavy sheeting or canvas, so that the seed which is threshed out may be saved. The alfalfa should be cut for seed when from two-thirds to three-fourths of the pods have turned brown.

Alfalfa may be threshed in either a clover huller or in an ordinary threshing machine by proper adjustment of concaves and by using special alfalfa seives.

There is harvested annually in the United States about 16,000,000 pounds of alfalfa seed, half of which comes from Utah and western Kansas and Nebraska. Arizona, Oklahoma, California, and Montana also produce considerable quantities. Some 3,000,000 pounds of seed are annually imported from Europe and South America.

PESTS THAT AFFLICT ALFALFA.

While alfalfa is not subject to more pests than most agricultural plants, there are a few especially troublesome. These may be divided into three classes: (1) Weeds; (2) Plant Diseases; (3) Insects and Animal Pests.

WEEDS.

Weeds give more trouble in growing alfalfa than any other one thing. As already emphasized, thorough preparation of the seed bed is of the utmost importance, because the young alfalfa plant does not fight weeds well. In the early alfalfa growths, quick growing annuals, such as the yellow and green foxtails and pigweed, present the greatest difficulty, but these are weeds which a thorough cultivation of the seed bed before planting will eradicate.

Blue Grass.—Without question the ordinary Kentucky blue grass is the worst weed commonly found in the alfalfa field. This is especially true if the field is pastured. Even when cut regularly blue grass is likely to crowd in after two or three seasons, and by the third or fourth year often has such a firm hold that the vigor of the alfalfa plants is greatly reduced.

Blue grass can be easily controlled or entirely driven out by cultivating the alfalfa, as discussed in other portions of this bulletin.

Dodder.—In alfalfa seed imported from European and South American countries are a number of weeds the worst of which is the dodder. Other troublesome weeds often so introduced are English plantain or buckthorn, wild carrot and dock.

Dodder is undoubtedly the worst weed to be found in alfalfa fields, but fortunately it is not as yet very common. As soon as the seed germinates the shoot of this parasitic plant begins its search for a host, for it can live but a very few days from its own strength. Coming in contact with the alfalfa plant, it entwines itself about it, sending many of its suckers deep into the walls of that plant, and taking the food materials from the alfalfa for its own use and growth. The dodder grows very rapidly, its dense masses of yellow stems choking the alfalfa completely. As the original host plant dies the dodder spreads to adjoining plants and so on until a single season may show an area more than a rod square killed as a result of a single dodder seed. About the only method of controlling the dodder is to cut the plants upon which it lives and then burn them on the ground. Where dodder is scattered throughout a field, the field had probably best be plowed up at once in order to prevent its spreading to adjoining plants and fields.

Russian Thistle.—While this weed is often found with alfalfa, it is not looked upon with much concern in this state, though it has proven very troublesome in many portions of the Northwest. Our common practice of cutting alfalfa three or four times during the season almost always kills this annual before it produces seed.

PLANT DISEASES.

Leaf Spot.—Leaf spot is probably the most common fungus disease to which alfalfa is subject in Iowa. It is found practically wherever alfalfa is grown and can easily be distinguished by the numerous brown spots which first appear on the upper surface of the leaves and soon thereafter may be seen on the under surface as well. Leaves so affected soon turn yellow and fall off thus greatly reducing the yield and quality of the hay under seasonal conditions favorable to the development of the fungus. This disease has reduced the yield of alfalfa fields in Iowa probably as much as one half. The lower leaves are the first ones to be attacked. The diseased spots soon produce spores which are blown by the wind and carried to other plants. The only practical method of eradication is to mow the field, removing the affected hay as soon as cured. The quick vigorous growth of the new shoots will often outgrow the disease, though if seasonal conditions are favorable to its development, the next cutting may also be seriously affected. Leaf spot is often wrongly called "rust" or "blight."

Root Rot.—This disease is most common in the southern states though it is now spreading northward and has caused some damage in Kansas. As yet it has not reached Iowa. It seems to attack a plant here and there, throughout the field, and from these centers of infection the fungus spreads to other plants.

INSECTS AND ANIMAL PESTS.

Grasshoppers.—In semi-arid portions of the country the grasshopper is the worst enemy of the alfalfa crop. Even in Iowa, in seasons such as those of 1910 and 1911 alfalfa is liable to severe injury from this insect since it offers the best source of food supply. Therefore when grasshoppers are particularly abundant it is well to use preventive measures for their control. The grasshopper is best attacked while in the egg stage. The eggs are laid by the female in the ground during the last half of summer. Before the eggs hatch in the spring, a spring-tooth harrow or a disk should be run over the alfalfa field, in this way breaking up and exposing a large number of eggs to the weather and other natural enemies.

When the adult grasshoppers are present in large numbers the "Hopper Dozer" can often be used to advantage. This consists merely of a pan or tank filled with water on the surface of which is a thin coat of kerosene. Mounted on two or three runners high enough that the bottom of the pan scrapes the alfalfa the pan or tank can be driven back and forth over the field, and as the alfalfa is disturbed, the grasshoppers jump blindly against the high back of the pan and drop into the water where they are killed immediately.

Blister Beetle.—The blister beetle has occasionally appeared in such numbers as seriously to damage large areas of alfalfa. During one stage of their development they live almost altogether on grasshopper eggs. Therefore any practice which will reduce the number of grasshopper eggs will largely control the blister beetle. They are especially liable to be numerous enough to cause damage in seasons following those years in which large numbers of grasshoppers have been in evidence.

It is of interest to note that the possible damage of each of the two most troublesome alfalfa insects is very largely controlled by the other. The blister beetles were especially abundant in most sections of the state in 1912 and caused considerable damage on many fields.

Web Worm.—In some of the older alfalfa growing states on the western border of the Mississippi valley, the web worm has occasionally caused serious damage. Eggs are laid on the alfalfa plant and soon hatch into small green caterpillars with black spots scattered over the back. These worms make masses of webs, at the same time living on the alfalfa plant. They do most of their damage during the months of June, July and August. As these mature they enter the ground, later coming out as moths which lay the eggs for the July brood. The July brood, in turn, produces an August brood which lives over winter in cocoon form, in the soil. When they are present in considerable numbers the hay had better be cut, thus eliminating the later brood which might develop, by removing the worms before they go into the soil. A thorough disking of the field in the spring will also greatly reduce their number.

Some fields have been seriously damaged by this insect in Iowa.

Pocket Gopher.—Perfect stands of alfalfa have been practically ruined through the ravages of the common pocket gopher. This little animal, burrowing through the soil, throws up large piles of dirt which not only bury many of the plants but also make it quite impossible to satisfactorily cut the crop.

While these pests can be greatly reduced by shooting and trapping a better method of accomplishing this is by the use of poison.

Small pieces of poisoned apple or potato dropped in the runways will usually be found effective as destructive agents since the pocket gopher lives almost altogether upon succulent green vegetable matter.

ALFALFA TROUBLES.

After carefully studying the successes and methods of others in handling alfalfa, and after taking every known precaution to insure the success of the seeding, yet a certain per cent of the attempts to grow alfalfa are certain to fail. Variations in weather conditions, over which we have no control, and which we are unable to predict, will in many cases be the cause.

In some cases it may be impossible to determine the cause of a failure, though in most cases in the past there have been so many causes, any one of which may have been responsible for loss, that one is surprised at the number of successes. While it may be demonstrated that a certain method of preparing the seed bed and of seeding is best on one soil, and under one set of conditions, different methods may be required on other soils. These are facts regarding which additional information is necessary and which will come through the practical growers who establish the crop in every community.

Causes of Loss.—Some of the factors which may be responsible for failure to secure a good crop and which should be guarded against are:

1. Lack of proper drainage. *Do not seed alfalfa on anything but a well drained soil.*
2. A sour soil: *Always test the soil for acid and if necessary use plenty of lime.*
3. Lack of the necessary bacteria: *When seeding alfalfa on a soil for the first time inoculate the soil.*
4. Lack of sufficient available plant food. *Unless the soil is very rich turn under a good application of manure in plowing for alfalfa.*
5. Soil too heavy or compact. *If soil better adapted cannot be had, grow sweet clover for a year in the rotation, then plow deep.*
6. Young seeding smothered by weeds. *Before seeding alfalfa see that the surface soil is freed from weed seed.*
7. Smothered by nurse crop. *When seeding with nurse crop reduce its rate of seeding from 1-3 to 1-2, and use winter wheat or barley in preference even to early oats.*
8. Lack of sufficient moisture to germinate the seed. *In case of August seeding thorough work will be necessary throughout the summer in order to conserve moisture.*
9. Seeding too deep. *In a thoroughly prepared seed bed the drill may run far too deep. The seed should not be covered much over an inch.*
10. A packed surface. *A hard rain may so pack the surface that a light harrowing will be necessary.*
11. Poor seed. *Test the germination of the seed in advance.*
12. Insect pests and fungus diseases.

Use sound judgment; do not be over enthusiastic; let the acreage of the first seeding be small until you know the crop on your farm, then grow alfalfa according to your needs.

PART XIII

IOWA STATE FAIR AND EXPOSITION
1913

Press Reports and Live Stock Awards

Results in Boys' Judging and Girls' Cooking Contest

PRESS REPORTS.

The Iowa Homestead, Des Moines, Iowa.

The Iowa State Fair is not an event, it is an institution. It is a university broader in its scope and more widespread in its appeal than the state's institutions of higher learning at Ames, Iowa City and Cedar Falls, excellent as these are. It is a clearing house of agricultural and industrial ideas. It is an exposition of the many and divers things which have united to make Iowa one of the really rich and great states of the nation, a state which has taken the lead in the inception of political reforms, in agricultural productiveness and in the high quality and standards of citizenship. For fifty-eight years the Iowa State Fair has been growing in popularity and usefulness until it stands, in 1912, at the very pinnacle of its educational appeal and all-round value. Designed originally to call attention to the agricultural greatness of the state, it has grown in scope until today it emphasizes the fact that while Iowa is a great farm state, it is year by year taking a rank equally high for its manufactures and its cultivation of the fine arts of industry. The 1912 Iowa State Fair, held at Des Moines last week, emphasized anew that "in all that is good, Iowa affords the best." Such a diversity of displays, viewed by so many people of such a high quality of citizenship and showing such an advanced state of prosperity and progressiveness, was never before witnessed in Iowa or any other state of the grain belt. Attended by record-breaking crowds, with almost ideal weather conditions prevailing and with a greater number and a greater variety of displays than ever before, the 1912 Iowa State Fair passed into history as the most successful, the largest attended and the most educational of any of the fairs in the entire series.

Thanks to a year of almost unparalleled prosperity the exhibits were numerous and varied, in keeping with the high rank which the state has won in agriculture and manufacture. With bumper crops of grain and with an augmented appreciation of "farming as a fine art," the Iowa farmer had every reason for attending the fair this year. He looked back over twelve months of undiminished prosperity. He looked forward to a winter of bounteous plenty. The harvest yields of the past few weeks, supplemented by the federal and state estimates of the corn yield and his own knowledge of local conditions, testified to the fertility of Iowa soil when the man behind the plow applies those advanced ideas of agriculture which are coming to be generally held and practiced by the progressive farmers of Iowa. In the midst of plenty and prosperity, there was borne in the necessity of taking more heed of congenial comradeship, of the amusements which add zest to work and of the education to be derived from looking at the fruits of other men's success. And so the Iowa farmers, to the number of fifty thousand or more, abandoned the every-day work of the fields for a few days and came to Des Moines, having learned by experience that money and time invested in a visit to the fair are well spent, with good and sure returns inevitable. Nor was the trip a disappointment. Thanks to his own prosperity and the liberal-minded management, this year's Iowa State Fair surpassed, in all-round interest, any which the state had ever held before. With here and there a department numerically weaker in exhibits than last year, the whole fair was "bigger and better" than ever, with an educational value and an amusement interest second to none; the year's opportunity of the citizens of a great state to have a good time and learn a lot into the bargain.

It is a conservative statement, well within reason, to declare that never before at any state fair has there been such a wonderful display of machinery and the mechanical aids to farming. The Iowa farmer is the implement manufacturer's best customer. He demands the latest and most improved mechanical appliances to aid him in making two ears of corn, two blades of grass, grow where only one grew before; to increase the profits of his acres and his herds. Year by year the Iowa farmer has come to depend more and more upon the inventive genius of his fellow man. The man with the hoe has been displaced by the man with a multitude of mechanical appliances, saving both time and labor. As this popularity of farm machinery has increased the mechanical display at the Iowa State Fair has kept pace, until last week it stood as the largest and best display of farm machinery ever gathered together at any one place in the grain belt, if not the entire country. From the moment the visitor alighted from street car or train, throughout the long circuit of the grounds, there was never a minute when the hum and whir of some machine making farming easier and more productive was not to be heard. The chug and snort, the whir and whine, the hum and blare of machinery was going on continuously, and scores of acres were given over to hundreds upon hundreds of appliances, marvelous in their human ingenuity and intelligence. If the 1912 Iowa State Fair is to go down in history as eclipsing its predecessors in any one great and striking particular, it must be for the quantity and marvel of its machinery exhibits. Not only was the new and capacious machinery hall filled to overflowing, but scores of smaller buildings and tents were crowded to capacity and acres of uncovered machines contributed to the display, a liberal education in the advance which farming methods in Iowa have made within recent years.

Due to the dock strikes in several of the largest shipping centers many of the principal stock importers were unable to display as many head as formerly, with the result that some of the stock departments were not numerically as strong as last year. The standard of quality set many years ago was consistently maintained, however, and the 1912 state fair goes into history as one of the great stock shows of the grain-belt fair circuit. One of the marked features in connection with the stock exhibit is the increasing interest of city folks. The new, brick horse barns, displacing the old and unsanitary wooden barns of past years, made it possible for the horses to be visited with more comfort and thousands of city folks who have held the erroneous, and all too prevalent idea that the motor car is driving out the horse were able to see that in the breeding and raising of fine horses Iowa still takes high rank. The entries in the horse, cattle, swine and sheep departments were of universally high order and good quality and attracted praise from thousands upon thousands of visitors. Not the least notable and praiseworthy feature was the fact that Iowa breeders are coming more and more to be the first prize winners at the Iowa State Fair, winning the honors over the breeders from other states, a matter over which the state may, with all due humility, take great pride.

One of the most noticeable features of the fair was the presence of the large number of farmer-owned and farmer-driven automobiles. It is conservatively estimated that fully 3,500 motor cars from the farm were on the grounds Monday and Tuesday. Commencing Saturday morning a steady stream of automobiles, driven by farmers and filled by farm families, was to be seen on practically every one of the main roads leading into Des Moines. Nothing shows more conclusively the prosperity which is prevalent throughout the rural districts. It has been repeatedly stated that more automobiles are being sold to the farmers of Iowa, Illinois and other grain-belt states than are being sold to the city dealers of New York and Massachusetts. A visit to Des Moines last week would convince the most skeptical of the truth of this statement. The automobile has come to be looked upon by the farmer not as a luxury, but as a necessity, cutting down time and distance between the farm and the town and paying for itself in the saving of horse flesh. It is also noticeable that farmers are buying a good type of motor cars and are proving to be efficient mechanics. On Monday, Tuesday and Wednesday, every one of the main thoroughfares in the fair grounds was lined continuously with parked automobiles, a great majority of which had been driven in from the country a distance of from seventy-five to 200 miles.

The building of the Iowa State College of Agriculture was the mecca of thousands of rural visitors to the fair and because of the diversity of exhibits and the practicalness of the instruction given was well worth the interest it occasioned. Daily lectures were given on general agricultural and home economics topics by members of the faculty, attracting large crowds. The exhibits covered a wide range, from a soils map of the state, showing the various "drifts" and the prevailing crops, to models of silos and lighting plants, noxious weeds, engineering appliances and hog cholera preventive. The various booths were in charge of members of the faculty and students who were unfailingly courteous in replying to questions. The manner in which the Iowa farmer is neglecting his best opportunities was pointed out in striking placards. The college exhibit is, in brief, a week's short course in agriculture and economics. Many a farm housewife, who has no other or better opportunity, here obtains the fundamentals of scientific cooking, thanks to the lectures delivered by Miss Campbell, Miss Knowles and others, while the interest thus quickened is continued by means of the bulletins gladly sent to those who are interested. Next to the stock barns and machinery hall, it is doubtful if there is any building on the grounds more interesting or more worthy of a visit than the one devoted to the state college at Ames.

Having won high rank in the breeding of live stock it is highly commendable that the state of Iowa should at last have begun to pay attention to the rearing of children. Under the auspices of the Iowa Congress of Mothers, a baby show was held at the fair grounds last week, at which some 250 children under the age of three years were examined for physical and mental qualifications, prizes aggregating $200 being awarded the most perfect. The examination was conducted by a corps of skilled medical experts, each child being subjected to a close examination which disclosed any physical defect. At the same time each child was subjected to a careful scrutiny by a mental expert, to detect the readiness with which the mind of the little one worked, mental quickness counting with physical perfection in the final score. The prize last year was won by a two-and-a-half-year-old boy, a resident of Des Moines, making the contest this year more strenuous in the effort to find an Iowa-reared child who would surpass the physical and mental qualifications of last year's prize winner. All too little attention has been paid heretofore to this most important matter of the citizenry of the state, so that the present movement is in every way commendable. Backed as it is by the leading club women and medical practitioners the movement should make such headway as to interest the entire state and in the course of time bring about a higher standard of rearing children, which shall make the people of Iowa take still higher rank both in a physical and mental way. The work at Des Moines last week was under the direct charge of Mrs. Mary T. Watts, of Audubon, former president of the Iowa Congress of Mothers. The scorers included Dr. Lenna Meanes, of Des Moines; Dr. Margaret Vaupel Clark, of Waterloo; Dr. Velura Powell, of Red Oak, and Dr. Florence Sherbon, of Colfax. The assisting superintendents were Mrs. E. E. Sherman, of Keosauqua; Mrs. O. A. Ruste, of Charles City, and Mrs. Charles Brenton, of Dallas Center.

Interest in the vitalized country church was quickened by the display made by the church and country life department of the Presbyterian Board of Home Missions, under the direct charge of Rev. C. H. Purmort. The exhibit occupied a conspicuous place on the piazza of the state college building and was visited by many people. It supplemented the excellent addresses delivered recently at the rural life conference held at Ames and showed the great need of introducing new methods and new life into the country churches of the grain belt, in which interest is all too rapidly waning. Conspicuous in the exhibit were placards similar to the following: "The country church has done everything in its power to pave the farmers' road to glory land, but it has paid far too little attention to his road to the nearest village." Statistics were posted on other placards calling attention to representative counties in various grain-belt states in which church life is rapidly dying. That this is largely due to inefficient ministers is shown by the record of Boone county, Indiana, which has eighty-two rural churches, seventeen with resident pastors, fifty with non-resident pastors (twenty-seven of these living outside of the county) and fifteen with no ministers whatever. It is the theory of those back of the movement to awaken interest in the rural church that only resident pastors, and those who live in the country and are personally familiar with country problems, shall be employed to minister to the country churches. The exhibit at Des Moines last week can hardly fail to be of value in carrying on this work to make the country church minister more and more to the daily needs of the country people.

"Give us a woman's building" is the cry of the women who took such an active part in last week's fair, not only in the management and conduct of the babies' show, but all over the grounds. That it is high time the fair board were seriously considering the cry few can deny. Much of the present prosperity and greatness of Iowa is due to the devoted and untiring women who from the pioneer days down to the present moment have worked with an eye single to the advancement of family, home and state. Other states of the grain belt have taken better care of their women, at their state fairs, than has Iowa. Minnesota devotes an entire building to its women, their work and their comfort. Why should not Iowa be equally progressive and appreciative? Iowa women are doing things in various lines of work that form the inspiration and the incentive for their sisters all over the country. Premiums in every department of the fair are being won by women in large number year by year. There are women farmers, doctors, lawyers, artists, sculptors, writers and preachers in Iowa whose work is every bit as inspiring and educational as anything that is being done by man. Why not answer the cry raised in Des Moines last week and give to the women of the state a building, all their own, in which to display the best examples of the work of the sex along many lines of endeavor, and at the same time provide for their comfort while attending the fair? The suggestion is worthy the serious consideration of the fair management.

A campaign to increase the potato yield of Iowa was planned during the week by Eugene H. Grubb, of the federal department of agriculture, who was an interested visitor at the fair. Starting early next year, Professor Grubb will assist Professor Kennedy, at the head of the extension department of the state agricultural college, in a movement to interest farmers in the unrealized possibilities and profits of potato growing. According to Professor Grubb, who discussed the matter animatedly during the fair, there is no reason why Iowa should not double its potato crop, year by year. "The great mistake the Iowa farmer makes," he declared, "is in his seed. The whole potato should be planted instead of cutting one into four to six pieces. It has been the common impression that potatoes should be cut up for seed, but the best results are obtained by planting the entire potato. Nature intended the pulp as sustenance for the plant and the shell protects it from rot and disease until its contents have gone to feed the plant." Professor Grubb, repeatedly called attention to the fact that the successful growers of Europe use from three to four times the amount of potato seed that the Iowa farmer does, with yields proportionately larger than those secured here. The potato campaign promises to arouse much interest throughout the entire state. The quality of potatoes exhibited at the fair this year was excellent, testifying to a large crop of sound tubers. But the yield can and should be materially increased and it is to this end that the campaign of next winter and spring will work. Affecting an article of such universal diet the campaign promises to have widespread beneficial results.

Twenty-five thousand visitors were taken care of at the information headquarters of the Commercial Club, which secured rooms for the entire number. One of the noticeable features of the work this year was the fact that thousands of former fair visitors returned to the rooms which had been secured for them in previous years by the Commercial Club. For some weeks prior to the opening of the fair, work was in progress listing the available rooms in the city, a maximum scale being provided so as to do away with the possibility of overcharge. The Commercial Club of Des Moines is to be commended for the manner in which it has carried on this work, not only insuring a maximum of comfort to the out-of-town visitors, but also providing against their being mulcted by too greedy lodging-house keepers. Fewer instances of overchanging at the restaurants and hotels were reported this year than ever before. One of the large down-town restaurants and one of the principal hotels raised their rates the opening day. The Commercial Club did everything in its power to compel a reduction to the former standard, but failing in this gave the proprietors of these two places such undesirable publicity that it is doubtful if the raising of rates brought the increased profits that had been expected.

The fair management is deserving of praise for the better quality of amusements provided the visitors. Three splendid bands were in attendance each day, furnishing a quality of music which shows that Iowa people crave the very best. On the Midway, the shows were cleaner than some which have been exhibited in past years and while the value, or necessity, of a Midway is debatable, still the management is to be praised for seeing that so few worthless and vicious shows were permitted this year. The necessity of giving a show, the main and only attraction of which are dancing "girls" of uncertain age and morals, a conspicuous place on the grounds may be questioned by many, but the custom is general and the Iowa Midway is much cleaner than that of many other state fairs of the grain belt. That the time will come, however, when all dancing shows and every manner of fake exhibition, in which the freakish element predominates, will be dispensed with entirely is a consummation devoutly to be wished. By far the most meritorious amusement attraction of the fair was the wild west exhibition given by the cowboys and Indians of Wyoming, brought to Des Moines from Cheyenne, where the Frontier Day celebration is an annual event. Riding bucking bronchos and indulging in the sports and work of cowboys make a spectacle which is highly entertaining, without any of the pernicious features of some of the amusement attractions of past years, in other states. Visitors to the fair must be amused. It is a gratifying sign of the times that the amusements provided for them are cleaner and more worth-while than they were in the past.

Dorothy Klusmeyer, a two-and-a-half-year-old Des Moines girl, won the prize at the baby health contest as the most perfect baby in the state. Little Miss Klusmeyer weighs thirty-two and one-half pounds, is thirty-six and one-half inches in height, has a chest measurement of twenty-one inches and head circumference of twenty inches. The perfect score gives a child the weight of thirty-one pounds, a height of thirty-five inches, a chest of twenty inches and head circumference of nineteen and one-quarter inches. What the little prize winner lacked in correst physical proportions she more than outbalanced in the psychological contest. The second prize was won by Robert Scott, a two-and-a-half-year-old boy, of Mitchellville.

The baby health contest attracted as much interest as any display on the grounds and bids fair to become one of the most valuable features of the fair.

Pioneer day attracted more than the usual number of early settlers. Appropriate exercises were held in honor of the hardy men and women who came to Iowa in the early days of the state and laid the foundation for the present stable prosperity. Several notable speakers were in attendance and eulogized the pioneers. One of the best addresses was delivered by Judge Martin J. Wade, former congressman from the second district. Among other things Judge Wade said: "I hope some day there may come some man touched by the fire of genius who can bring out the history of the pioneer; who will thrill his readers not with the great things, but fascinate them with the little things that were done in the days when they were oftentimes without fire, when clothing was patched and faded, when food was scarce and comforts and conveniences were denied to those who toiled. The early settlers remember the prairie fires that used to sweep the country years ago. They remember the hardships and the grinding toil. They are the people who were here in the beginning who laid the foundations of which this exposition is one of the magnificent results. It is a marvel of human accomplishment and determination. And if there are any names that should be traced in gold upon the records of the past it is the names of these men and women, not to immortalize their own glory for that is immortalized already, but for the benefit of posterity."

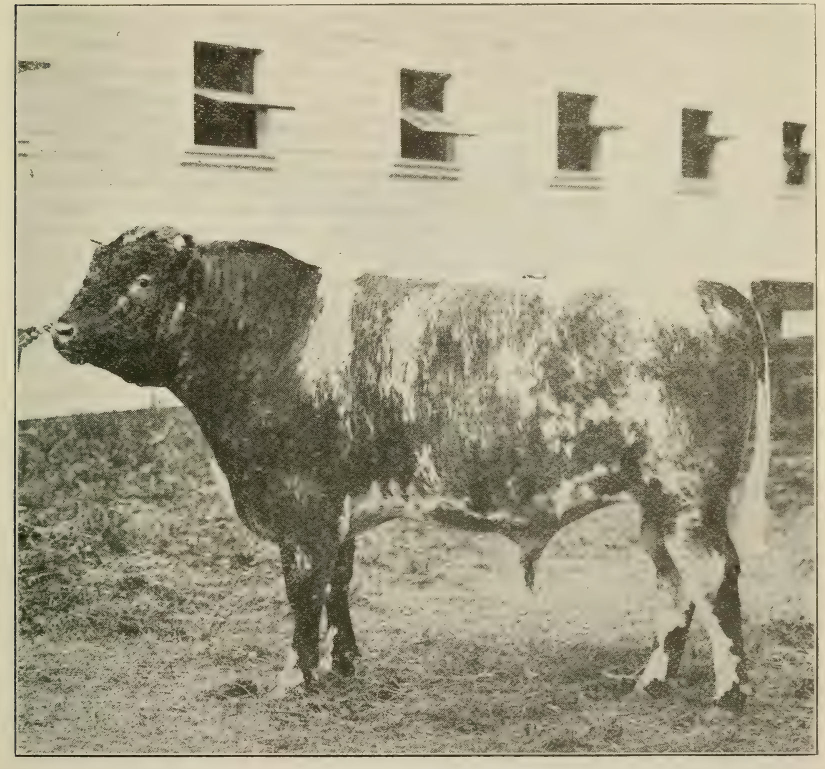
Aeroplane flights were made every day of the fair, several accidents (fortunately none of them fatal) marking the flights the latter part of the week. Three aeroplanes, two biplanes and one imported monoplane, made daily exhibitions. On Wednesday one of the biplanes was wrecked because of the engine "going dead" at an altitude of 2,000 feet, while on Thursday the remaining biplane and the monoplane were damaged. Fortunately, however, none of the aviators were hurt, and the machines were repaired in time to give flights on the closing day. Although it is only two or three years that aeroplanes have been in evidence at the state fairs they did not prove to be the drawing cards this year that had been expected, the aviators themselves complaining of the lack of interest which was manifested in their flights. The starting ground was in poor shape at Des Moines, which made it impossible to make the easy ascents desired.

Unofficial figures give the total attendance for the week as 272,070, which is 1,388 in excess of the total attendance for 1911. While the attendance during the past week was not so much on the two big days, falling short of the 1911 record by 5,000 on Tuesday, still day by day the attendance this year compared most favorably with that of last year and the aggregate is larger. The fact that the railroads had refused to grant any excursion rates no doubt kept many prospective visitors at home. Although the weather was good throughout the entire week, threatening rain served to cut down the local attendance. As a result of these two factors attendance was not as large as had been confidently expected. The profits of the fair this year are approximately $32,000. Inasmuch as the new cross-section horse barn cost $26,000, this year's profits will not only pay for this fine new building, but will leave a tidy balance for further improvements.

BREEDING CATTLE

SHORT-HORNS

Five states were represented in the Short-horn classes at the Iowa State Fair, although seventeen of the twenty-one exhibits were from the Hawkeye state. Numerically some of the classes failed to reach the former record, but there were animals of the very best type in all classes. In the aged bull class Missouri carried off the blue on Diamond Goods, a magnificent type of modern Short-horn shown by Bellows Bros., of Maryville. The character, substance and fleshing qualities of Diamond Goods led him through to grand championship honors in the bull classes. Mr. George J. Sayer, of McHenry, Ill., had a clear lead in the cow classes, winning first in the aged cow class, first in the two-year-old heifer class, first on yearling heifer and first on junior heifer. Fair Start 2d, Mr. Sayer's aged cow, carried off grand championship honors and many could be found at the ring side who predicted that under fair treatment she would not be defeated on the entire show circuit. In the two-year-old bull



JUNIOR CHAMPION IOWA SHORTHORN BULL
Iowa State Fair, 1912

classes Judge Ryden had no easy task and while the blue fell to the Anoka Farm on Sultan Stamp, yet this honor was strenuously contested by Count Avon, owned by Rookwood Farm. With the elimination of outside exhibits the Iowa classes alone made an unusually strong showing and the fact that seventeen exhibitors were present is the best indication that this feature of the show is growing in popularity. Mr. A. J. Ryden, of Abingdon, Ill., did the judging and his work was done most creditably indeed.

IOWA SHORT-HORN BREEDERS

The members of the Iowa Short-horn Breeders' Association met at the Iowa State Fair Grounds on the evening of August 28th and effected an organization of that association. Thirty-two breeders were present. The principal business of the meeting was the election of officers, which resulted as follows: President, D. Tietjen, Bellevue, Iowa; Vice-President, Wm. Herkelmann, Elwood, Iowa; Secretary and Treasurer, E. B. Thomas, Audubon, Iowa; Directors—C. A. Saunders, Manilla, Iowa; George H. Burge, Mt. Vernon, Iowa; Ralph Watt, Miles, Iowa; Howard Vaughn, Marion, Iowa; W. A. Wickersham, Melbourne, Iowa. It is probable that the association will hold a winter meeting at Ames some time in January, when matters of general interest to Short-horn breeders will be taken up. The Iowa Short-horn Breeders' Association was at one time a powerful organization and effective in the advancement of the interests of the breed. It is to be hoped that with the promising future now ahead of the cattle business, it will regain its old-time vigor and usefulness.

HEREFORDS

The White Faces held down the heavy end of the cattle department of the Iowa State Fair, outranking any other breed in numbers and making a new record for individual excellence of entries in most of the classes. The line up in the aged bull class set the pace and while the Cudahy entry, Fairfax 16th, carried off the blue he did it with so small a margin as to make the honor all the greater. In selecting Fairfax 16th, Judge Van Natta indicated that he was going to emphasize animals of good scale combined with smoothness and heavy fleshing qualities. These he found in a remarkable degree in this noted son of the great Perfection Fairfax. In Prince Perfection, the leader in the two-year-old bull class, the judge found another bull of good size combined with remarkable substance. The top of the senior calf classes, Repeater 7th, shown by O. Harris, was a sensation for a youngster and went through to the junior championship without serious trouble. In the cow classes the Cudahy entries captured the best ribbons, Scottish Lassie winning first in the aged cows and the grand championship prize on females. In many of the classes there was such uniformity and so much remarkable Hereford character that the closest kind of discrimination was required in the placing of the ribbons. The Hereford exhibit indicated that the office of the Hereford association is working in harmony with breeders in making quality the watchword rather than quantity and the success of this combined effort at the Iowa State Fair sets a pace for the other breeds. Judge, Frank Van Natta, Lafayette, Ind.

ABERDEEN ANGUS

Iowa breeders alone made the show in the doddie classes at the Iowa State Fair last week and to their credit it must be said that while no records were broken in the matter of numbers, there was no discount on the excellence of the showing made. An examination of the championship honors will show that no one herd had the inside track. In the aged cow class Mr. Miller captured the blue on Barbara Woodson, a cow good enough to go through and wear grand championship honors. A remarkable showing was made in the doddie herds and groups, there being five and six entries in every class and all up to the highest possible standard. The fight throughout between Binnie, McHenry and Miller was a warm one, making for the judge, C. J. Martin, Churdan, Iowa, some tasks of rather large importance, tasks, however, that were performed creditably.

POLLED DURHAMS

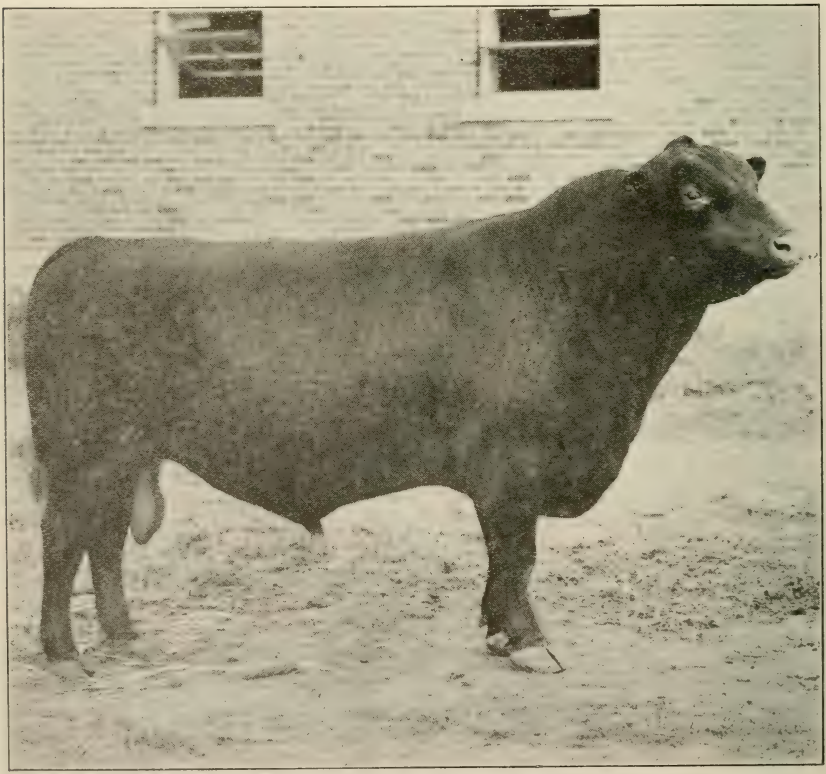
The Polled Durhams made a very good, although not a very large showing at the Iowa State Fair last week. In practically every class there were good animals to put at the head. In some places it was very close. In too many of the classes the animals toward the bottom showed a little rough, due partly to lack of condition and partly to prominence of shoulders and hooks. Taking the animals as a whole, however, the showing was creditable and shows much promise for the breed. The cow, Lady Marshall, was the outstanding animal and Mr. Silliman, the judge, called her a remarkably good one. She carries lots of width, is deep and heavily fleshed. The heifer, Capacious Sultan, is also an excellent individual, but hardly carries the type of the older cow. The bulls, Sultan's Creed and Meadow Sultan, the champions, show up well and are rugged bulls with good flesh. The get of sire class brought out the get of Anoka Sultan, The Baron and The Cupbearer of Prize, as well as did the other classes, Miller having the edge on the winnings on the get of Anoka Sultan. Judge, E. R. Silliman, Colo, Iowa.

GALLOWAYS

The showing of Galloways, while not as large as some of the other breeds, was creditable in every way. In total number they rank just about equal to last year's exhibit. Take them all through they were a little more even in their type. The Galloways that were placed at the top of the classes were very compact, quite smooth and heavily fleshed. Towards the bottom of some of the classes there was the tendency towards roughness. Straub Bros., led in the winnings. Their cattle are the get of the bull, Captain 4th of Tarbreoch. They are a very thick and uniform sort, showing to a marked degree the prepotency of the sire. The senior champion cow, Ladylike, was made grand champion over the little heifer, Clara of Maples 4th, owned by Hechtner. The little calf is a very good handler, very smooth and won junior championship over the older heifers. In the bull classes Choice Master was the favorite and might also be said to be the outstanding bull for the grand championship. He is a very deep bull, low set and fairly smooth, beating the three-year-old bull some in the shoulders and in thickness of fleshing, and showing to a better advantage than the junior champion. Chas. Escher, Jr., Botna, Iowa, did the judging.

RED POLLS

"That was the finest display of Red Poll cattle ever shown in the Des Moines arena and one of the largest and best ever seen in America," was the enthusiastic comment which Harley A. Martin, secretary of the Red



GRAND CHAMPION RED POLLED BULL
Iowa State Fair, 1912

Poll Cattle Club of America, made after inspecting the exhibit. "In point of numbers," he continued, "it surpassed anything ever shown at the Iowa State Fair. Uniformity and general excellence were marked features of every class, which accounted for the fact that there were but few outstanding entries. It was very much an all-star caste. Every admirer of the breed had reason to be greatly encouraged by the showing made by our breeders."

A census of the classes revealed the somewhat surprising fact that but two other breeds outnumbered the Red Polls. The management had found it necessary or convenient to accommodate the Red Poll herds in at least four different barns and, in consequence, the actual strength of the breed was not realized until the count of the classes was made. Wishing to present a still more impressive display another year, the exhibitors expect to petition the management for better accommodations. With nearly all of his classes crowded with well-grown and well-fitted representatives of the breed, not infrequently the judge, James Wilson, of Brookings, S. D., was compelled to do much close studying in order to select his winners. It, in fact, took him the better part of three afternoons to distribute the ribbons allotted him. He found the cow and heifer classes the most impressive and of these was particularly taken with the group of aged cows. From among them he selected his strongest contender for the championship. Five-year-old Lena conformed most closely to his ideal of a dual-purpose cow. Teddy's Best, shown by Haussler Bros., who last year were in partnership with Frank Davis & son, also of Nebraska, was Mr. Wilson's choice for the championship of the bull contingent.

DAIRY CATTLE

Is it possible to produce dairy animals which can win in the show rings as now organized and at the same time be capable of producing profitable quantities of milk and butter fat? This is a question which is discussed at every competitive exposition of dairy cattle and it was given consideration by a number of breeders who were interested in the displays of dairy breeds made at Des Moines last week.

Because good producers do not always win in the show ring, some breeders believe there should be a radical change in judging methods and contend that the acceptance of present-day ring standards prevents the development of utility in dairy animals. Others insist that there is no antagonism between the standards for dairy cattle which rule in the show ring and those which have been worked out upon the farm.

Charles Hill, president of the American Guernsey Cattle Club, is one of those who values records of production above show winnings, but who also realizes that there are many people who are willing to pay good money for beautiful cattle even if they are but moderate producers. The judge who would not turn down an off-type cow when selecting cattle to conform to an ideal standard as defined by a scale of points would not again be considered for such a responsible position by men of Mr. Hill's convictions. Mr. Hill, while admitting that it is true that most of the best producers are not outstanding show type cows, sees no reason why cows cannot be high-class producers and also conform to present day show-ring standards. Similarly, Wilbur W. Marsh, one of Iowa's most noted breeders, believes that producers can be of the highest show-yard standard, but agrees that it is a hard matter to prove this as long as many of them are not. However, greater consideration is being given by fair managers to the matter of production and at not a few of the expositions special classifications are now provided for cows which have made large records.

GUERNSEY

The showing of Guernseys was wholly and unexplainably out of proportion with the popularity and prominence of this great breed in the corn belt. A year ago this great Channel Island breed was represented at Des Moines by five herds which, in all, contained sixty or more head and the results of the contest were such as to warrant the prediction that the display of Guernsey cattle at the fifty-eighth Iowa State Fair would be still larger and there were those who even dared to anticipate that it would be superior in point of quality. On the contrary, however, but three herds, aggregating less than forty animals, were shown and although a superior lot throughout, yet in but few instances was it superior to that seen in the Des Moines arena in 1911. W. W. Marsh, of Waterloo, had expected to show his herd, but, after making the necessary entries, found it impossible or inconvenient to make the exhibit. The absence of his "string" weakened the display considerably, for in the few years he has been engaged in the business of breeding Guernseys Mr. Marsh has succeeded in assembling and developing one of the best herds to be found anywhere in the middle west and not a few of his animals have repeatedly won premier recognition in the closest of competition and at the hands of the most discriminating of judges. The judging last week was done by William Forbes, of Lincoln, Neb., who has but lately accepted an important position with the dairy division of the United States Department of Agriculture. His ratings were carefully made and, in most instances, met with the ready approval of exhibitors and onlookers. Among the senior herd bulls he found Bob Rilma best qualified to contend for the championship and of the juniors none pleased him as well as did Raymond of Sarnia, a son of Raymond of the Preel IV., which was imported by Charles L. Hill, president of the American Guernsey cattle club. This yearling gives promise of developing into a strong show-ring contender, but the transfer from his home quarters to the less comfortable accommodations afforded en route and at the fair had not agreed with him and in consequence he was not appearing in his best form. Of the females none proved more attractive than two sets of twin heifers shown by Messrs. Wilcox and Stubbs. The two year olds are daughters of Galaxy's Sequel and Daisy Bell of the Grand Fort and at preceding shows have also been accorded special recognition. The second pair were sired by Diamond of Tucre and mothered by Patricia of Sarnia. They, too, are superior individuals. The senior yearling, Park's Princess Rhea and a daughter of Rhea's King of the

May was the unanimous choice for the junior championship and was only defeated for the grand championship by Aline of Lawton 2d, a five-year-old matron which traces back to Prince Rosendale.

JERSEYS

Herds from five important corn and grain-belt states met at Des Moines and provided an exhibit of "cream producers" which easily surpassed any shown at the Iowa State Fair in previous years. The display was not as much superior in numbers as it was in quality and fitness. Several of the same herds were shown in 1911 and all but one of these had since been reinforced by purchase or by drafting from their breeding herds. Then, too, the exhibitors had their entries in fine condition. Of course occasionally an animal was led into the ring which was not appearing in show shape and there were a few which should have been left at home. Friends and those acquainted with a breed are perfectly willing to make generous allowance, but fair-goers in general often discount an exhibit considerably because it happens to include a few outclassed and unfitted entries. A year ago a "sprinkling" of the American, or roomy and useful type, was to be seen in every class, but the showing presented last week was wholly devoid of this feature. The strictly "Island" type is more popular with the great majority of men who judge at our fairs and expositions and it would seem that those who exhibit have yielded to the inevitable and are now showing the sort most sought after in the show rings. Among the young things were so many likely contenders as to afford great encouragement for the future success of the herds of which they are members. The aged bull, Stockwell's Fern Lad, came back again this year still better equipped to battle with his old rivals, Beauvoir's King and Combination's Golden Prince, which were rated superior to him in 1911. The Stockwell bull was appearing at his best and his size and finish appealed strongly to the judge, W. I. Hunter, of Lincoln, Neb., who found it agreeable to award him the senior and grand championship. The final competition for the premier honors was supplied by a son and stable mate, Stockwell's Champion, a very promising youngster. Warder's Proud Beauty, an excellently-shaped matron fully supplied with milk-producing equipment, was chosen for the championship contest, as were the typey three year old, Ibsen's Cherry, and Ibsen's Glory Coulisse, a beautiful daughter of Ibsen's Glory, owned and exhibited by Mr. Bruins, of Wisconsin. Messrs. Young and Cotta & Williams, from Nebraska and Illinois respectively, submitted heifers which were decidedly superior in type, but not sufficiently outstanding to prevent the daughter of the noted sire, Warder, from winning the championship.

BROWN SWISS.

The managers of all middle western fairs always depend upon Wisconsin breeders to furnish their patrons with an exhibit of Brown Swiss cattle and no time are they disappointed with the representation which the Badger state breeders provide, for in their herds are to be found some of the best and most typical specimens of the breed. Although but three herds, two from Wisconsin and one from Iowa, were shown, the display was of an exceedingly high order and about as representative as could possibly be assembled. Nevertheless, the judge, Wm. Forbes, of the United States Dairy Division, found himself confronted in each class with the task of making his selections from among animals which represented two distinct types, one of the more old-fashioned sort, exceedingly large of frame, and the other more refined and, based upon the standards commonly accepted for dairy animals, exhibiting greater dairy temperament. At one time the breeders endeavored to make the Brown Swiss a dual-purpose breed, but that is no longer their ideal. On the contrary, the economical production of milk and butter fat is singled out by them as the chief characteristic of the breed. They contend that theirs is a breed unusually strong in constitution and therefore able to bear up under the heavy strain incident to milk and butter fat production. Among the males none appealed to the judge more than did Zell, a five-year-old son of Junker, which has had a brilliant show career at the Iowa and Minnesota State Fairs and at the National and International Dairy Shows in 1911. Upon neither circuit has he shown in the smoothest of form, but he is a grand show bull and in addition has proven an unusually good sire. Of the younger bulls, Casper Delta, shown by the lone Iowa exhibitor, proved a worthy but by no means dangerous competitor of the old campaigner. Cuma, although dry, won premier honors among the cows and in doing so first had to eliminate Allyn's Arlene, a nicely-modeled matron. The older cow, however, had the massiveness and the scale, which gave her the decision. Myone Baby, the champion of the 1911 Brown Swiss showing at Des Moines, was retired to third position upon her first appearance, but the three-year-old heifer, Betty of Allynhurst, led out by the same exhibitor, fared better. A stable mate, Bella Rosita, was made the grand champion because of her superior quality and general conformation. The groups were a choice assortment throughout and were to a large extent bred by the exhibitors, which fact made the excellent display all the more noteworthy.

HOLSTEINS.

Iowans who admire "black and white" cattle were very much encouraged by the manner in which their breed was represented at Des Moines last week. Three Iowa exhibitors were assisted by a Wisconsin breeder in providing a display which, in some respects, was classed by many as one of the best ever presented to a corn-belt audience. The aged classes, while well filled with animals of a very useful sort, were not as noteworthy as several of the younger strings. This, however, is a most encouraging prospect. It proves conclusively that the breeders are making steady progress and it augurs well for their future success. Although in the very heart of the corn belt, dairying is becoming more and more one of the most important of Iowa's farm industries. And, as would naturally be expected, the Holstein breed is deservedly popular with many of the dairymen of the state. Perhaps no small amount of the credit for this rising popularity is due to Dairy Commissioner W. B. Barney, who did considerable pioneer work for the breed not only in Iowa, but in several other of the middle western states. The judge of the breed, Dr. M. B. Wood, Mankato, Minn., found things quite to his liking in practically all of the younger classes, but was particularly impressed with the line-up of senior heifer calves. "It would be extremely difficult to lead out five better and more even calves than the quintette before me," was his enthusiastic comment after making a careful inspection of the lot. "They certainly approximate perfection about as nearly as we have any right to expect." His junior champion female, however, was chosen from among the yearlings, Foekje De Kol Hengerveld being the recipient of this high honor. Another nominee for the championship was Groveland Pontiac Hijlaard, a growthy and superior two year old shown by Frank White. But the likeliest of all the candidates was Chloe Jewell of Cedarside, a three-year-old daughter of Count Aaggie Netherland De Kol and Miss Alice Gerben De Kol. Dr. Wood found much about this heifer to commend and willingly handed her owner, Mr. Nelson, the much coveted ribbon. Because of his length and depth of body and strength of constitution, Rockdale Perfection De Kol was awarded the male championship.

AYRSHIRES.

Although but one herd of this noted Scotch breed was shown, the judge, Dr. M. B. Wood, of Minnesota, found animals worthy of special commendation in every class appearing before him.

Adam Seitz, of Waukesha, Wis., with a herd numbering twenty head, was the sole exhibitor. Eight of his "string" were selected from among the best herds of Scotland and his herd bull, Bargenoch Gay Cavalier, is recognized as one of the best Ayrshire sires ever exhibited in this country. Mr. Seitz purchased this champion from one of the leading breeders of Canada and has already refused several flattering offers for him.

FAT CATTLE.

The fat classes of none of the breeds were strong in numbers. Some good individuals were shown, but a large part lacked in condition or in type to make the very best showing. The keenest competition came in the grand champion and the champion group between the Short-horn steer owned by Saunders and the Hereford steer owned by Hazlett, the Short-horn being fatter than the little Hereford steer, but a trifle soft in his flesh and not quite as typey as the little fellow. After considerable discussion the judges placed the award on the Hereford. The Herefords also won the group, although it was close.

DRAFT HORSES.

The draft horse show at the Iowa State Fair this year demonstrated that Iowa farmers are becoming interested more and more in pure-bred draft horses. A few years back the larger part of the exhibits was by large importers. This year the small breeders came to the front. The majority of the horses shown were American bred, and a great many of them Iowa bred. In total numbers the horse-show was not up to the number of last year. This is due partly to shortage of feed and also to some of the importers not having their stock ready for show. The large importers present were Dunhams, Trumans, Lefebure and Finch Bros. Each had some choice material, as is shown by their winnings. However, the champions of two of the breeds were American-raised horses. Another thing that showed up well and around which the interest of the horsemen centered was the futurities. This year classes were opened for fillies and a total of forty-one were shown. The futurities serve a triple purpose—to increase the interest in the young colt, so that it is better cared for; to furnish valuable prizes and a place to compare the yearlings, and then as a market place for the horses, as the breeders watch the ring close for the good ones. Iowa is to be congratulated on having this feature as part of her show and the outlook for next year is brighter than ever before, for the breeders realize that it means something to land in the futurity money. It is interesting to note that many of the animals shown at the fair have been winners at smaller shows over the state. This is especially true of the grade classes and the exhibits show in a way the value of the small shows, for they arouse the people's interest to something bigger.

PERCHERONS.

The Percherons presented the largest number of horses of any breed, but were not as numerous as in some former years. This shortage is due partly to shortage of feed and partly to the importers being unable to bring their horses over early. Dunhams were the leading exhibitors of imported horses and their horses had not become entirely acclimated yet, so were showing to some disadvantage. The show did present, however, some of the strongest home-bred animals that have ever been exhibited in Iowa. According to recent figures approximately one-fourth (24.2 per cent) of the Percherons in America are raised in Iowa. Many of these colts with some of the best from Illinois made an unusually good showing in the futurity classes. It was here that W. S. Corsa, with the get of the noted sire, Carnot, showed up prominently and won the choice prizes in both the colt and filly classes. However, he did not have things all his own way, for he was closely pressed in the colt class by the McMillan colt, Matador, a colt with excellent feet and legs combined with lots of substance. This was the first year for the fillies in the futurity and a splendid showing was made. It was very encouraging to see many of the smaller breeders showing and many of these men were up well towards the top. The champion mare, Rosine, is called by many a better mare than the light-colored mare that was champion last year. She is a mare that is larger and has more substance throughout, but is still possessed of splendid quality. The champion stallion is of excellent type, rugged but with quality. As he was showing thin he looked to be a bit up from the ground, but he had the other things, so could not be denied the favorite ribbon. In the get of stallion classes there was a battle between the get of Carnot and that of Calypso. After careful examination Mr. Bell, the judge, gave the preference to those of Carnot. They showed to better advantage, as they were all the same age. The showing of the foals was encouraging for the futurities of next year. Judge, Wm. Bell, Wooster, Ohio.

SHIRES.

Although many of the leading middle western breeders and importers exhibited, the showing of Shires was in no way sensational. By force of necessity or by choice a number of the exhibitors were not as well represented as they have been upon some of the circuits, but will undoubtedly contribute stronger displays to some of the later shows in which they have reason to believe the competition will be closer. The "futurity" awards organized by J. H. S. Johnstone attracted splendid strings of yearling stallions and fillies and undoubtedly otherwise strengthened the showing of the breed. Robert B. Oglvie, secretary of the American Clydesdale Association, judged all of the classes, and in awarding the futurity premiums called in H. O. Weaver, Wapello, Iowa, to assist him. From among the eight aged stallions he selected Trumans' big bay, Dunsmore Willington Boy III., for his championship, but found a better qualified entry in the three-year-old Lord Carlton, also shown by the Bushnell firm. This brown is of the type popular with Shire men. The reserve championship fell to an imported yearling, Carlton Royal Grey, which Mr. Ogilvie found well enough equipped to stand above the futurity winner, a splendidly grown bay shown by John R. Rittenhouse, but raised by J. L. Marks, of Indiana. This toppy youngster, Cecil Rhodes by name, when shown at the last International, won first in his class of five. Alexander and Graham Galbraith exhibited the first-prize aged mare, Dows by Sunbeam, a well-organized eight year old which they purchased from the Trumans. The champion of the mares, however, was not chosen from among the aged matrons, but instead from a small class of two year olds. Frithville Princess, a breedy, good bodied and well underpinned black, was given the purple ribbon and a most precocious weanling, Pine Krest Primrose, was placed in second position.

BELGIANS.

Some of the horsemen accounted for the rather limited showing of Belgians upon the grounds that a number of the exhibitors have sold themselves "short" to meet a better than expected demand for breeding animals. Then, too, several of the show strings have not as yet been reenforced by this season's importations. The general quality of the display was, therefore, scarcely up to expectations. Alexander Galbraith, one of America's most noted Clydesdale experts, picked the winners and, true to his instincts, insisted upon favoring the entries which had the cleaner underpinning and which could move well. In fact, he sometimes found it necessary to retire contenders which upon first appearance seemed entitled to win, but which upon closer inspection were found to have defects particularly distasteful to a Clydesdale man. Henry Lefebure's five-year-old Jules Remi was preferred to Irvine's Robert II. De Rum which was not showing to as good advantage as he will—at least should—later in the season, although Finch Bros.' chestnut yearling afforded him strong competition. Villiant De Merfes, a large bay, mounted upon an excellent set of limbs and a good mover as well, was accorded the championship. Working with John Truman, of Bushnell, Ill., Mr. Galbraith selected this youngster as the winner of the futurity stakes and thus admitted him to the championship contest. If carried on in present good form this yearling will certainly make things interesting for future championship aspirants. The champion mare, Laura, a drafty and broody six year old, came from the same stables. Appearing against her for the final honors were Bella Terlinden, French's matronly three-year-old chestnut; Lefebure's Chunky Luzette; McCarty's yearling, Elsie, winner of the futurity, and Finch Bros.' outstanding foal, Mayme. The groups were an even lot and gave the judge an unusual amount of difficulty in arranging them.

CLYDESDALES.

This was a Clydesdale year in the horse classes at the Iowa State Fair. They outranked all other breeds except the Percherons in numbers, while in quality they were up to the highest possible standard. The Canadian judge, Mr. William McKirdy, emphasized good feet, the right kind of pasterns, these to be combined with plenty of quality and considerable weight. It was made apparent in these classes that Clydesdale men generally do not crowd their young stuff, some of the yearlings and two year olds showing a little thin in flesh. The futurity class was strong. The winning colt, Charnock, was good enough to win for the Galbraith stables not only in his class, but also the grand championship prize on stallion. The American-bred horse was in evidence in every class and in most cases they forged to the top. In this respect possibly the Clydesdale men are setting a pace for others to follow, their work so far indicating that American grain and American grass will produce just as good horses as can be produced anywhere on earth. One prominent reporter was heard to remark that if some of the American-bred Clydesdales shown at the Iowa fair were in Scotland they would almost be unpurchasable. Judge, Wm. McKirdy, Napink, Manitoba.

THE LIGHT HORSE AND PONY DIVISIONS.

There was abundant evidence at Des Moines last week to prove that the automobile is not supplanting certain classes and breeds of horses. The "drafters" were there in sufficient numbers to refute the often-repeated assertion that the motor-driven trucks are rapidly taking their places upon the streets, in the yards and even upon the farms. The demand for breeding animals and marketable stock continues strong despite any suspicions to the contrary. And the showing of several of the light breeds was so strong in numbers and so excellent in character as to allay all fears that the breeders would soon have to modify their operations in order to meet changing economic conditions. Walter Palmer, of Ottawa, Ill., who judged the saddle and harness horses and who perhaps is about as well informed as anyone upon conditions in the light horse world, was enthusiastic over the showing he was called upon to inspect. He estimated that the saddle horse division was fully 100 per cent stronger than any previously arranged for Iowa State Fair goers. In fact Mr. Palmer rated the display as being on a par with those seen in Missouri and Kentucky, the very homes of the saddler. In explanation of the growing interest in the breed Mr. Palmer admitted that the automobile was taking the place of the "driver" with many people, but declared that men who like horses have turned to the saddlers and predicted that in the future the demand for superior animals of this type would be stronger than ever. George M. Rommel, of the bureau of animal industry of the United States Department of Agriculture, judged the Morgans and found them a representative lot. He left Des Moines to go to Middlebury to inspect the Vermont showing which is supposed to outclass all others, but expressed himself as satisfied that the "tops" of the Iowa display would be as good as he would find at the eastern show. Similarly the exhibits of American carriage horses and standard-bred trotters placed by W. A. Dobson, of Des Moines, proved as satisfactory as any he has ever rated, the conformity to the accepted types being the noteworthy feature. Considered collectively the Hackneys were a disappointment and Alexander Galbraith, of De Kalb, Ill., who awarded the premiums, regretted the relatively poor representation of this noted English breed. Prof. W. J. Kennedy, of Ames, Iowa, who judged the pony classes, was well pleased with the showing which, too, was larger and better than ever.

DRAFT HORSE BREEDERS' ASSOCIATION.

On Wednesday evening there was a meeting of the Iowa Draft Horse Breeders' Association. It was a very enthusiastic occasion and the association shows that it is going to form the center around which the draft horse interests will be furthered. One of the most important things that was done was the appointing of a committee to encourage the legislature to make an appropriation helping draft horses, as it has done with beef cattle. The membership of this association is growing and every person who is interested in the improvement of draft horses should either joint or boost its purpose, as its membership is open to all who are interested in draft horses.

SWINE.

While the conditions incident to swine raising this year have been almost universally discouraging, it was a matter of congratulation for the management of the Iowa State Fair that breeders have sufficient confidence in their business and sufficient hopefulness for its success that the exposition again comes to the front with a showing of hope unequaled by that of any other state. It is true that the discouragements of the year reduced the total number of animals in the pens to 2,266, or a reduction of 521 head from the figures of last year. The Duroc Jersey breed met with the greatest falling off, the figures for last year being 986, while this year only 759 head were in evidence. Poland Chinas increased from 702 to 725, Chester Whites decreased from 586 to 401, Hampshires from 303 to 297, Berkshires from 120 to 118, Yorkshires from 68 to 63 and Tamworths from 22 to 21. It will be noted that the bacon breeds came nearer to holding their own with reference to numbers than did the lard type of hogs. In all divisions there were a greater proportion of Iowa breeders than ever before. There was an almost total absence of any of the old-time professional showmen. The exhibits were largely made by breeders who, while hoping for winnings in the competitions, were at the fair for the especial purpose of making sales of breeding animals. While there was a fair inquiry for strictly high-class hogs, it was stated that sales were rather slower than had been anticipated, the situation being due to the prevalence of disease in a great many sections. The management of the Iowa State Fair is to be congratulated for the splendid sanitary condition maintained and for the careful attention and endeavors to promote the interests and welfare of breeders. Awards by breeds are given below.

DUROC JERSEYS.

In point of numbers the Duroc Jersey division of the fair leads all others. The character of the exhibits showed the advancement that has been made in recent years and pointed to a still brighter future for the breed. It might be said that it was largely a breeders' show rather than one which presented evidence of art in the fitting and preparation. Conservative men freely expressed regret that there was so much ground for much of the dissatisfaction voiced with the decisions of the judge. The situation is one that demands candid consideration on the part of promoters of the breed and the fair management. No industry possessing the magnitude of that here represented should be permitted to suffer disintegration and discredit because of the machinations of any part of those in whose interest this show is held. Dissatisfaction was loudly expressed over the fact that a judge recommended officially by the Iowa Duroc Jersey Breeders' Association should not be chosen by the fair management. The prominence of the Iowa State Fair makes it important that the influence which dominates the making of awards must be such as to command the highest respect, not only of those who are engaged in the production of pure-bred animals, but of the entire pork-producing fraternity as well. It is too big an institution to be dominated by any influence not directly to the advantage of the entire community. This exposition is an educational institution. Its influences extend to all parts of the pork-raising world. Its types should be accepted as of the most approved and accepted ones. Its characteristics should be in line with breed improvement. Its lessons should be true ones and unquestioned in the information they provide. H. F. Hoffman, Washta, Iowa, placed the awards.

POLAND CHINAS.

The Iowa State Fair has built up a well-earned reputation as being the greatest exposition of Poland China excellence to be found in the United States. Some of the show rings of the past years have been remarkable because of the wonderful uniformity of type, form and characteristics. It is a fact beyond question that the Iowa State Fair has been one of the greatest incentives to the production of good Poland China hogs. While from year to year there has been a constant increase in numbers brought to this fair, for some time there has been a falling off in the stronger points and more desirable features of the animals driven into the competitive rings. It is perhaps a fact unfortunate in its influence upon the pork-producing interests of the West that selfish interests have so manipulated public sentiment as to have created dissensions and unfair competition among the producers of the breed. Anyway it is safe to say that the wide diversity of types as shown at the Iowa State Fair this year and last have indicated a set of disorganized ideas as to proper, practical and profitable form. The departure from agreed type has brought about such extremes of dissension and ill-will that for several seasons the management of the Iowa State Fair has looked upon the selection of a judge who should be the means of satisfying a majority of exhibitors as a most difficult contract. Certain it is that exhibitors have gradually assumed for themselves privileges which could not well be accorded and which border closely upon a breach of common courtesy. This situation culminated at the show of the present year in a most unfortunate circumstance. The management of the Iowa State Fair had selected as Poland China judge, Harvey Johnson, of Logan, Iowa, an old-time breeder, a gentleman of absolute integrity and a business man whose record is without blemish. Mr. Johnson consented to assume the duties of judge only after considerable urging because of the fact of ill health. As a matter of fact, his condition might readily have excused him from assuming any of its duties. At the close of the second day's judging the contentions of various disappointed exhibitors became so loud and assumed such an attitude of discourtesy and injustice to the judge that Mr. Johnson refused to complete the work. At the solicitation of the management, J. M. Stewart, of Ainsworth, took up the remaining classes and made the awards. In the early part of the show F. L. Rood, of Clearfield, Iowa, acted as consulting judge with Mr. Johnson. Much of the discord shown among breeders arises from their insufficient knowledge of what has previously been accomplished. Size is not a late development of the Poland China hog. A quarter of a century ago King Tecumseh, a magnificent show hog of symmetrical proportions, style, finish and quality was driven into the Iowa State Fair show ring as an 800-pound yearling. A year or two later Free Trade followed in the same line and was almost unanimously pronounced the greatest hog that ever made the rounds of western fairs. L.'s Tecumseh, a champion, and Lea's Wonder, a mammoth champion, both met the demand for size and at the same time carried other attractive and desirable qualities. Still later came Chief Tecumseh 3d, big, good and right all over and an individual that would today be looked upon as a type practically beyond criticism. In the same class belonged his son, Standard Chief, that had to his credit the fact that he was the biggest yearling ever shown at the Iowa State Fair. It is true that the influences of following a fad in popular blood lines had harmful effect on the breed, but these influences might readily be overcome by a common-sense method of selection and of practical methods of feeding.

CHESTER WHITES.

The Chester White division presented, as it did last year, a high standard of excellence and one which was a convincing demonstration that the breed is constantly advancing on those points of excellence which go to make a hog of the desirable sort. There is a close approach to breed type throughout, a notable scale with sufficient finish to prove attractive to old-fashioned showmen. The Iowa exhibitors made the most of their opportunities and carried away with them a majority of the ribbons distributed by Mr. Gentry.

HAMPSHIRES.

With 297 head of hogs in the Hampshire pens, there was a notable percentage of high-class animals carrying strong breed characteristics and of an admirable bacon type. There was a perceptible advance of bacon form over that shown by the breed last year. Taken as a whole, no breed showed greater average excellence. The number of Iowa breeders who entered the competitions was great and a majority of them presented sufficient merit to carry off a good share of the premiums.

BERKSHIRES.

The Berkshire exhibit was more nearly than ever an exclusive representation of Iowa swine, there being but one exhibitor from outside the state. The younger classes showed rather more merit than the older ones but on the whole the exhibit was called one of credit to the breed.

YORKSHIRES.

Two herds of Yorkshires brought together a collection of 63 animals of that breed. These were B. F. Kunkle, Redfield, Iowa, and F. M. Buck, La Porte, Ind. The hogs shown were good specimens of the breed. The absence of Iowa exhibitors was due to the presence of disease during the preceding season. Ribbons were awarded by C. C. Roup.

SHEEP.

The sheep department of the Iowa State Fair was large enough this year to overflow the pens provided for the exhibits and because of this one wing of the swine pavilion was used as sheep quarters. Although in many of the classes outside exhibitors were a little too strong for Iowa contestants, yet there were a number of instances where blue ribbons were carried away by Iowa exhibitors.

Breeders Gazette, Chicago, Ill.

The fat lands of Iowa never laughed so riotously at the harvest as in this year of grace. The season's opening was not auspicious. Temperatures below normal and an excess of water gave late start to farming operations, and the crop year in dependable Iowa opened in doubt. Gradually under the wooings of more congenial environment the fields of the Hawkeye state took on more seasonable aspect, until forced by timely and well distributed heat and moisture the glorious early harvests have been shouted home, and the unprecedented tonnage of stalks and ears now borne by the cornfields of the state await a period of maturity only a little longer than usual. Never has such wealth been mined from Iowa soil in a crop year. Assuming fruition of the corn fields—and little apprehension is entertained on that score—the farmers of the state will have garnered materially in excess of any year's production in the history of the commonwealth. Here and there conditions fall a trifle below the average, under the influence of local disturbances, but so broad a smile has never before wreathed the agricultural countenance of the state.

The expansion of the state fair is no less notable than its permanence. Men of broad vision have utterly failed to comprehend the development to which these institutions have attained in the past ten years, and that to which they are unrestrainedly headed. The agricultural fair is more or less the creature of the weather, but in modern days seasons of limited production or weeks of untoward weather alike prove futile to prevent appealing displays of the agricultural resources of the state at these exhibitions. The state fair has struck that gait which goes on forever. It may hesitate but never halts under the handicap of unfavorable seasons. No fair more clearly than Iowa testifies to this gratifying condition. In leaner years it has served as a reminder of the fat years, and if gate receipts are lessened by a day's rain, the turnstiles click all the more merrily the succeeding day. As an exponent of a year of memorable yield the fair at Des Moines last week fulfilled as admirably its mission as it has in times gone by when smiles did not chase themselves in endless procession over the faces of farmers. It was all that fairly could be required of such an exhibition in such a state and in such a year of plenty.

Those who "grouch" at the expenditure of tax money on public educational schemes wonder why the state fair never ceases to importune for additional appropriations. They evidently never saw, or else beheld without appreciation, a small boy outgrow his pants. Few fairs have builded beyond their present necessities. Most of them have made the mistake of exercising a small faith. Iowa continues to meet the expansion of its great exhibition as well as finances will allow. No less than $68,000 were expended on material improvements for the show this year. The most noteworthy betterment was the acquisition of ten acres of land in the southwest corner of the grounds, adjoining the railroad tracks, at a cost of $13,000. This opens up the machinery exhibit, which has been sadly congested the past few years, and affords a fine and prominent setting for this material feature of the week's display. Visitors by trolley and vehicles come first in touch with this department, so there is no longer sequestration of these important exhibits. Streets have been laid through the new addition and when final finish is given by their permanent surfacing, the department for outdoor exhibits will leave nothing to be desired. When the other half of the splendid machinery hall is completed—funds for which will be sought from the state—it is believed that most of the exhibits now in special buildings on the east of the track can be consolidated in the machinery hall, so that the department will be no longer divided.

The importance of sufficient and convenient transportation facilities has always been appreciated at Des Moines. For many years the train service furnished by the Rock Island has been without a superior in the country, and it is maintained at a high state of efficiency. The trolley is far less comfortable and more time-killing, but the people demand it by reason of its lower fare and greater convenience of access in the city, and every effort has been made to perfect this service so far as its natural limitations permit. The addition to the grounds allowed the building of a new trolley station which when completed will be 260 feet long, 100 feet of that space having been already finished. This not only doubles the length of the unloading track, permitting eight cars to discharge and load passengers simultaneously, all under cover, but it affords track storage room for from 25 to 30 cars. The improvement in this respect is material. With improved facilities for trolley service, the reliable and comfortable trains, and the motorcars, the thousands who crowded the grounds were transported in far better fashion than ever before.

The most striking improvement in interior equipment was the new horse barns. These were built as a cross section of the fine barns which have given such complete satisfaction, and now two-fifths of the contemplated structure has been erected. The addition affords stalls for 130 draft horses and 132 ponies, together with a carriage section 60 by 132 feet,—an equipment wanting on any other fair ground, and greatly appreciated by those exhibitors who contribute to the entertaining harness horse shows. The addition covers a space of 156x224 feet and is constructed of brick and steel, with roomy aisles admirably fitted for the display of the equine exhibits in their stalls. The remaining old frame barns have been removed from their historic setting around the former show circle and placed in line to the west of the new structure. A straightaway exercising and show track and a show arena have been provided south of the barns, and the department is thus admirably equipped.

Further expenditure was incurred in laying about 100,000 square feet of cement floor in the machinery hall and agricultural building. Two new bleachers, each 192 feet long and holding 5,500 people, answer in part the demands made for seats to view the races and infield attractions. A total of 12,500 people can now find seats, but at times it was estimated that from 30,000 to 40,000 people were congested about the grandstand and home stretch of the track.

Ample facilities had early been provided for keeping the stock well washed but it seems somewhat of an afterthought—none of the less welcome—to establish a dozen shower baths in the swine exhibition pavilion for the use of live stock exhibitors. The herdsman's lot is hard enough, and all such conveniences which minister to his comfort and self-respect are hailed with marked appreciation.

This brief story of the improvements in the staging of this exhibition leads to the enumeration of novel features of the show. We should class the State Fair Boys' Camp of prime importance. All but about ten counties in the state were represented and the plan was followed that was brought first into prominence at the Illinois State Fair. The state board held supervision of the camp, which was in direct charge of the Y. M. C. A. superintendent of county work. Lectures and instruction at the different exhibits were given by the agricultural college professors. The youngsters from the vantage point of their camp on the hill certainly found inspiration enough to repay the cost of this most commendable feature of modern state fairs.

The baby show drew much attention. Health and physical development not beauty was the standard and the application of the accepted standard of physical development in infants afforded lessons which should prove beneficial. Ample basis exists for estimating the young of the human species upon the same basis of physical excellence as the young of other animals. We shall think and act more sensibly and less sensitively on this subject in time.

The fish and game exhibit grows in interest. It is the start of a feature of this character which will serve as a foundation. Under canvas the tanks of fish and pens of pheasants drew throngs of visitors, and laid a sure basis of appeal for a legislative appropriation of $25,000 to place this engaging and instructive exhibit on a permanent basis.

Redemption proceeds apace in the agricultural building. Its roof shelters the products of Iowa soil, and the boomers of other farm lands made their displays under canvas in other parts of the ground. The regeneration of the exhibits in this building has been gratifying. Many square feet were devoted to exhibits of individual farm products, and in these farm displays he who runs may read an astonishing record of versatility and excellence of production. If one stops to count the different products he will lose time on his schedule, as they are not quickly enumerated. Taste was evinced in their presentation and the home pride kindled by such displays must inevitably engender corresponding sentiment in the minds of other farmers.

The small grain exhibits were amazing. Corn of course is in the making, and a small show from last year's fields gave hint only of the maize possibility of the state, but the sheafs of small grain bore confirmatory evidence of the sensational yields reported from all sections of the state where the separators have been at work.

The State Dairy and Food Commission is to be credited with excellent missionary work. Its exhibits were attractive and its facts and figures, briefly presented in predigested form, were very convincing.

Up on the hill the agricultural college at Ames made very complete representation of its leading lines of work, and bright young men were in attendance to add whatever of explanation the visitor desired. A lecture room was filled twice a day and a capital lift was thus given to the serious educational work of the fair. The public school exhibit, presenting the handiwork of the modern schools which train the hand as well as the head, continues to impress itself on visitors.

More than 2,200 people were camped on the grounds for the greater part of the week. The camp ground on the hill among the beautiful trees was this year laid out in streets and alleys, so skillfully that vehicles could be navigated along them without cutting out any of the trees. Each tent was numbered and a directory maintained at camp headquarters, so any camper could be readily located by callers. This way of seeing and studying the fair is steadily growing in popularity.

Not every Iowa farmer owns an auto. Not all who own cars came to the fair. But in another year it will become a problem as to parking the cars during the day. They now line the main streets in a solid row, but their increase is so rapid that in a few years space must be found outside the grounds for their storage during the day. Most of them were palpably farmers' cars. The man at the steering wheel indicated it and his passengers confirmed it. Some came with tent poles and canvas roped onto the side of the car, with other camp outfit on the trunk rack. It seemed that nearly every car had a different town pennant, and they came from miles away. The Iowa dirt roads are notoriously good. The road drag has solved that problem for most months in the year. The law requires its use. No road is so good for a motor car as a smooth dirt road, and motoring is in high and growing favor in Iowa.

The automobile exhibit was gathered under the grandstand. The floor space was filled with cars of standard makes, the medium priced ones in the majority, and aisles were simply thronged with farmers seeking information concerning motor cars. In encouraging automobile exhibits fair managers undoubtedly add an attraction of great interest.

A bench show, with an extra small admission fee, demonstrated the possibilities in a state fair exhibition of dogs. Its popularity was very plain. The classification was open to improvement, and already competent authority has been engaged to perfect it for another year. Several Chicago exhibitors sent entries of unusual excellence and a kennel show is firmly established as a drawing feature at this fair.

The pike was inoffensive. It has been gathered apart unto itself. Its nearest tent is 60 feet back from the street, and its entrance is not conspicuous. People who want that sort of diversion can find it on inquiry, and those who do not, need not know that it is on the grounds. The authorities vouched for the decent character of these shows, as they were winnowed out before engagement.

The Coliseum night shows played to crowded houses. Scarcely a night did accommodations suffice to hold those who willingly paid an extra half dollar to see these arena performances. A little horse show was sandwiched in, together with contrasting exhibitions of the Morris six-horse team, and the Heyl six-in-hand of Shetland ponies, hitched to a miniature truck—a novel and entertaining feature. The unusually high class of horses in harness and under saddle permitted some very interesting events which were judged as a part of the Coliseum night programs. The arena was beautifully lighted and handsomely decorated with flags and bunting, and enlivening music was furnished in abundance. While the grandstand at the race track was packed each night with people who viewed the special attractions which ended with fire works, the Coliseum also drew overflowing houses. As money-makers these night attractions have so thoroughly proved themselves that the student of such exhibitions wonders that any state fair has so far lagged behind the procession as to fail to incorporate them in its program.

The racing was very entertaining. The half mile track breaks no records, but the events were races, not processions, and the crowd greatly enjoyed them. Specialty acts, including airships that sailed beautifully, separated the races, and there was something on the carpet every minute in front of the grandstand.

The gate receipts at this fair ran uniformly ahead of last year. The weather was of the regulation corn brand. The furnace seven times heated may have been hotter; if so Shadrach and the rest of them must have been a trifle scorched. But the heat was badly needed to mature the wonderful corn crop, and so all smiled and perspired. A shower broke on Monday morning but people were well out at the grounds before it came. Wednesday carried the threat of rain most of the day, but gate receipts were seemingly not affected. At this early writing nothing definite as to financial outcome can be submitted, but the first half of the week certainly brought gratifying returns to the state fair coffers.

The live stock departments were numerously filled. This story will be developed somewhat in detail, but in brief, numbers held up well, although in a few sections the absence of leading breeders and importers caused a lowering of the average excellence. Horses occupied the Coliseum arena in the morning and cattle in the afternoon, so that the dangerously congested condition witnessed in the arenas of some state fairs, when both cattle and horses are in the arena simultaneously, was absent. The judging for the most part presented the conclusions of trained men and was largely accepted without murmur by exhibitors. The entire record of this show was creditable alike to the management and the exhibitors who contributed to one of the most satisfying fairs ever held in the cornbelt.

THE SHORT-HORNS.

Exhibitors were plentiful enough and top entries appeared in all rings, although the sensation of numbers usually seen in this arena was wanting. It was largely an Iowa show, although Wisconsin, Illinois, Missouri, Nebraska and Kansas breeders also made entries. Some splendid cattle were forward, but in many classes after the tops were sorted the average of excellence dropped off rather sharply. The absence of a number of the most prominent herds of recent years occasioned a gap among the real good ones that was plainly noticeable. Very few common ones were shown; nearly all the entries were of useful character and most of them well conditioned, but candor compels the comment that the exhibit as a whole did not rank with the great shows on these grounds in recent years.

It fell to A. J. Ryden, Abingdon, Ill., to make official choice of candidates for honors, and his work lined up largely with the prevailing sentiment. In one or two classes there was a very active "post mortem" by ringside talent after the ribbons were tied.

THE BULL CLASSES.

Diamond Goods from Missouri successfully coped with imported White Star among the company of aged bulls. This son of Good Choice is somewhat of a wonder in his way. He is so extremely wide and deep that he looks more of a "chunk" than he really is. His weight is quite sufficient as a three-year-old and in his massiveness, his trueness of outline and set of underpinning the bull commands profound respect. The thickness of this bull, the smoothness with which he is covered, the heft of hind quarter and the general balance give him prominent place in any company of the latter day bulls. White Star charms with his front, but fails somewhat by comparison with his rival in hind quarter and hind legs. Scotch Avon is a strong thick rather upstanding roan. Sultan Stamp, the white, differentiated the type in the two-year-olds rather strongly, Count Avon, on the more "Scotchy" order, moved up the line until he encountered Type and then he stopped. Such scale as Sultan Stamp carries is not often seen. From his nose to his hips he is decidedly impressive, and with his difference in type it looked like first or nowhere. Count Avon has the advantage of him in hind quarters. He is certainly a most taking sort, low, wide, well-fleshed and nicely finished, with full-fashioned rounds and an attractive way of standing squarely on his pins. King Cumberland 2d is a real blocky one, and barring a little plainness at the tail head is very even. The roan Corrector certainly has scale to commend him, ranking in this respect with the head of the class.

The roan senior yearling Gloster Fashion never was headed after he set foot in the arena. He walked in a winner and this finely colored roan, with his ample size, palpable substance and grand top seems facing a career full of distinction. Silver Sultan has a lot of stretch to him and he is deep, but scarcely so well rounded in rib as the one ahead of him. Gay Lord carries less scale but more evenness. The junior yearlings were not the strongest class in the show. The senior bull calves mustered nearly a score, quite uniform in merit and decidedly useful in type. Gloster Mine, the leader, is a very shapely roan, with level lines and a good crest, but failing of the depth shown by Cumberland's Pride. This latter is a real sappy one, heavy ended and full flanked and well spread through the chine. The tidy well-spread youngster Village Cumberland, quite evenly turned, was at the top of the junior calves, followed by Scotch Goods, a longer-bodied and higher-up calf, with attractive levelness. The square-ended Clipper Stamp was in the fighting.

THE FEMALE SECTION.

When imported Fair Start 2d was passed up to premier honors among the cows, the remainder of the company did not long detain the judge. This familiar roan cow shows a little evidence of show yard service, but withal is fairly fresh and extremely comely, with charming feminine character. Her excellence through the foreribs is rarely equaled. New Year's Delight is showing a most attractive front, but wants somewhat in the hind quarter. One or two real "double deckers" were in this company. The two-year-olds were much more impressive in their average character. The roans Mary Ann of Oakland 2d and Queen Mildred carried honors for the Illinois herd. Whatever may have been the rating of these heifers heretofore, their present form made the judge's preference for the Glenbrook Sultan heifer a rather self-evident proposition. She is swinging an udder of remarkable size for so thick and fat a heifer. Mildred preserves her blockiness and with her mate makes a strong pair. Sultan's Aconite meets you most attractively and there is a depth and a breadth of top that pleases. Mildred of Oakland had no difficulty in topping the class of senior yearlings, as in her shape, size and substance she presented undeniable claims.

Quite likely the best class of the females was the junior yearlings and here they fell out as to relative excellence. The big upstanding wide-topped roan Her Excellence stopped down third in the row, but she had warm friends for best honors. The type of 78th Duchess of Gloster, a real rolly-polly and ripe, is apt to win favor even as against more scale and spread. Touch Me Not is off the same piece, only a little more of length and height, so that it was suggestive a trifle of a step ladder in the upward tendency from the first to the third prize heifer. One of the low-down type came forward among the capital senior heifer calves, 15 in numbers, and 79th Duchess of Gloster kept a blue ribbon in Iowa. She is a choice lass, close pressed by Sittyton Anna, a calf of splendid ribs and loin, but a trifle higher up. From the Anoka pair, Spicy of Anoka was chosen for third honors, and she is shapely and well fleshed, but the attractively lined white Fancy Mine will need watching as she matures. Bonnie Cumberland 8th is off the same piece as her senior stall mate. She held the best place in the line of 15 juniors, and pleased with her rotundity and character. Hill Krest Lassie stood above the red nugget Victoria of Wayside, but the latter had strong points for a little more favor.

The group competitions brought out their usual features of interest, while the championships held close attention. Diamond Goods made his way through the lists, and emerged a very creditable grand champion at this fair.

THE HEREFORDS.

The honors for uniformity of excellence of the highest class palpably lay with the Herefords on these grounds. Numerically the exhibit ranked well with the most notable opening shows, and from a critical standpoint it was generally conceded that never had toppers been in more plentiful supply in any breed at an Iowa fair. Rarely has this breed disappointed its supporters in its exhibition form. Some years have witnessed a waning of interest, but for more than a quarter of a century the "white-faces" have been reliably counted on to furnish sensational features in the beef cattle section. Never has the traditional record of the breed been more stoutly sustained. The Des Moines exhibit goes into history as one of the most impressive, most stoutly contested and cleanest shows the breed has made in America.

The exhibitors are entitled to the credit for this demonstration, revealing in all respects a spirit of harmony that makes for push.

Awards were recorded at the direction of Frank W. Van Natta, Fowler, Ind., one of the most successful breeders and extensive exhibitors, and he had plenty of problems of a distracting character, which he solved from a well seasoned point of view.

THE BULLS.

The fight was on from the first. The seven aged bulls saluted like gladiators and revealed a wealth of character and flesh. The class was finally headed by the old-time winner Fairfax 16th, which has come into a real sensational form, approached from the standpoint of scale, character, wealth of flesh and smoothness from end to end. He ran a winning race to the grand championship, every inch of the way hotly contested. Standard is closer to the ground and a wide and bulky one, somewhat mellower, but wanting the finish of hind quarter which rounds out the strength of the Missouri bull. Tippecanoe carries the most scale of the three and is an impressive bull, but fails somewhat in spring of forerib compared to the two set above him. Beau Sturgess 2d carries a hind quarter of remarkable shape and weight. They came strong as the show progressed. An undeniable head among the two-year-olds was Prince Perfection and this is high praise when his chief rival, Corrector Fairfax, is considered. Rarely has so big, bulky, smooth and even a two-year-old been accounted to the credit of the breed as Prince Perfection, and with all his beef he carries a world of Hereford character. Corrector Fairfax lacks his size and bulk, but is a flash one, with impressive head and crest, the most level lines and a taking rotundity. The senior yearlings, led by Graceful Lad 3d, marked a spot where excellence suffered a slight set-back, but the standard by which they were compared was high. The ten juniors made more impressive bows, following the lead of Prizewinner, which commands supreme respect for his spread of frame and strength at both ends. He carries hindquarters of unusual heft and fleshing, and his weight is smoothly disposed. Straight-lined and somewhat more upstanding is Beau Fairfax, with a bull head and neat tail finish. The senior bull calves held material of much promise, and found a leader in Repeater 7th, which sent the third of the possible half-dozen blue ribbons among the bulls to the Harris herd. The top notcher among the juniors was found in Duke Real, much on the "dumpling" order.

THE FEMALE CLASSES.

Much of show yard history was represented in the company of cows. They were fresh indeed considering the campaigning to which some of them had been subjected. When Mr. Van Natta had lined them up and found Prime Lady 2d close at the top ranged alongside the champion Scottish Lassie, he requested to be relieved of the decision as he had sold the Prime Lady 2d to the Indiana exhibitors at the top price of his dispersion sale. By agreement of Messrs. Van Natta and Mr. Cudahy the claims of the contestants were referred to Charles Escher, Jr., for adjustment. Prime Lady 2d brought into the ring the pledge of her usefulness, while Scottish Lassie left at home a calf of about the same age. The champion of the past two years becomes the champion of the opening exhibition of this season, according to the decision. Scottish Lassie is just the same as ever, only more matronly. In her symmetry and flesh and finish she presents a strength that has acquired for her unprecedented show yard honors. The wide-ribbed Prime Lady 2d is broader of top and very attractive in her finish. Gay Lass 5th, with her bulk and bloom, looked a winner in almost any company and Princess 16th, in taking form and finish, has not been accustomed to ratings so far down. Lady Fairfax 4th is grandly topped and heavily fleshed. The dozen two-year-olds made most unseemly contention uphead. It ended with Perfection Lass in top place. This straight and round barreled heifer is finely finished and presented few "holes." The sharpest fighting was with Disturber's Lassie 4th which stood a trifle taller and carries more depth. Amy Folly is low enough and carries a great top. The ten senior yearlings developed a cap sheaf in Donald Lass 9th, of the sweetest femininity and most attractive spread of loin. Princess Repeater was her stoutest opponent for chief honors.

The junior yearlings numbered eleven and the Cudahy cattle again took up the running with Celandine 2d, so like the type of the former winners from this herd that description is unnecessary. Miss Peerless Fairfax is heavy ended, neat about the hips and level topped, while Folly Bird is burlier throughout. The senior heifer calves included only a few among the fifteen that could not be classed as prime. Pearl Donald, shapely, round-ribbed, straight, completed a series of victories for the Cudahy cattle which sent into the ring for the herd prize an unbroken line of blue-ribbon cattle—a condition without precedent in the recollection of the oldest "railbirds." Miss Gay Lad 7th is egg-like in her modeling, and full fleshed in the rounds. Until the ribbons were hung she stood at the top, and the rating was generally accepted. It is likely that the decision which turned her down found least favor among onlookers of any that Mr. Van Natta rendered. Nine fat furry-coated babies had a most decided head in Miss Repeater 11th, the nugget of the show. She is several kinds of a wonder in her spread, and her weight of smooth milk fat. Gertrude Fairfax has more scale and is taller, with splendid turn of top, but not so full fashioned in the hind end.

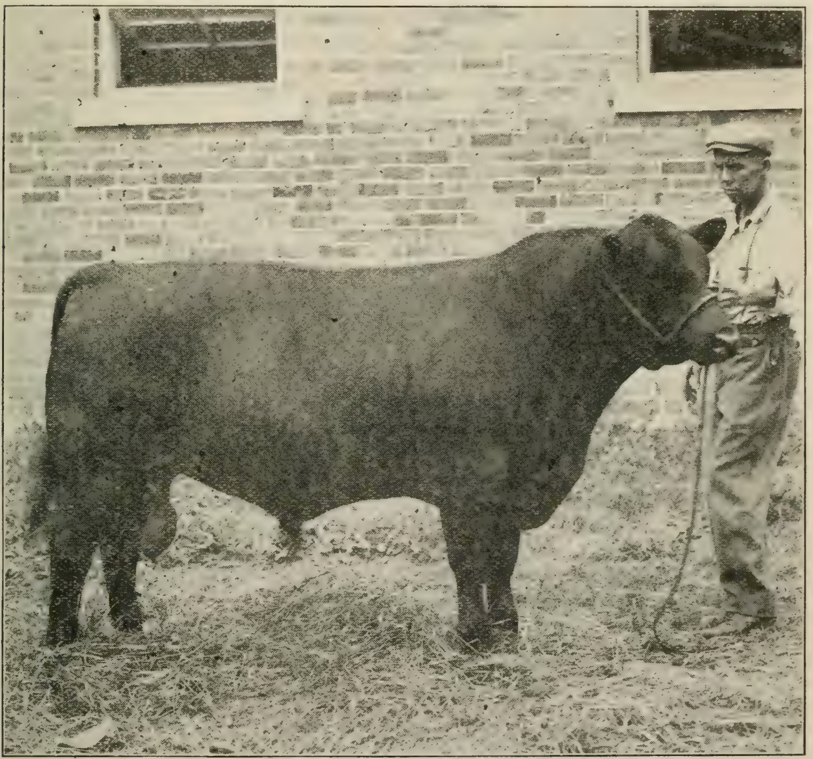
The championship was fought out between Fairfax 16th and Prince Perfection and was a battle royal. Rarely has any breed presented so impressive a contest. The decision left the younger bull to bide his day.

THE ABERDEEN-ANGUS.

Somewhat smaller in number than usual and by no means up to the general average of merit displayed by this breed for many years at this fair, is the summary of the situation in this section. It is a long campaign from the last week of August to the first week in December and many an animal that wanted somewhat of condition at this time will be presented at the International in scarcely recognizable form. The younger classes carried considerable promise, especially among the females. The awards were made by C. J. Martin, Churdan, Ia.

The smooth Kloman was the leader among the aged bulls, although he lacks the strength and masculinity desired in such a winner. Erwin C. is deeper bodied and quite smooth of top. Everblack possessed the greatest scale and flesh and barring a somewhat prominent shoulder was quite smooth. The bull classes were not particularly impressive, although something will doubtless come of some of the youngsters in time.

The low wide round Barbara Woodson was found for the blue ribbon among the matrons, and went through to the championship. The massive Barbara McHenry 24th was better fitted in type for this honor, although not quite so fresh. Eileen of Alta, that was placed second, has not the finish of hindquarter to qualify her for such a position, although low set. The two-year-olds afforded much greater satisfaction in their appearance as they sent forward as usual the best class of the exhibit. As Mr. Martin had bred three of the entries awards in this class were made by E. T. Davis. Blackcap McHenry 84th and Blackcap McHenry 88th were on the list in the order named, the former a growthy, wide and thick-fleshed heifer, of no little smoothness, and the latter wanting somewhat in scale and thickness in comparison with her mate. Abbess of Alta is a deep and shapely heifer. The McHenry cattle scored again in the same positions among the senior yearlings and the same comments apply. Metz Blackbird is a nicely topped lass. The juniors were few in num-



PRIZE WINNING ANGUS BULL
Iowa State Fair, 1912

ber, and were led by a McHenry entry. The senior calves aroused some enthusiasm and Pride McHenry 108th was clearly the winner, as she is rounded out well. A few real "wee" ones appeared among the junior calves, the winner being the shapely Blackcap of Alta.

THE GALLOWAYS.

Classes of moderate numbers but brimming full of quality beef came before Charles Escher, Jr., the judge of Galloways. The breed made an excellent showing, for the average character of the cattle was on a high plane and there were no inferior or very thin animals to detract from the favorable impression the exhibit created.

Straub Brothers started the winning with the big thick-fleshed smooth three-year-old bull Marquis, a more masculine impressive type of a sire than his one competitor. They showed an outstanding winner in the next class. This bull Choicemaster resembles Marquis in type and is a son of the noted sire Captain 4th of Tarbreoch. The Hechtner entry has considerably more substance than the Huff bull. There were half a dozen good yearlings, of which the level fleshy smooth Casino was selected for the blue ribbon. He is larger and wider than his nearest rival. The third bull Prince Favorite is level and growthy but lacks flesh at present. A wonderfully solid, thickly covered little fellow named Minnie's Favorite was brought to the front from the Hechtner herd among the four senior bull calves. He is also lower set and more pleasing in character than the larger Monarch 5th. Handsome 4th, the winner among the juniors, is a very growthy meaty straight-backed youngster. There was a beautiful line-up of stately shaggy matrons with Ladylike declared the winner. As a low wide level beef type she leaves little to be desired and is extra strong in hindquarters. She is of wider mold than the next one and both of these are stronger of top line than the third. Some excellent heifers appeared in subsequent classes.

THE POLLED DURHAMS.

There was not a large exhibit of Polled Durhams but the entries had been selected with discrimination reflecting alike the success of breeders and a pride in their productions. The awards were made by E. R. Silliman, Colo, Ia.

Only two aged bulls appeared, and The Baron, a son of The Confessor, is the larger, wider and smoother. Mr. Miller's roan two-year-old Sultan's Creed, beefy and full of character, headed the next class handily. The Achenbach senior yearling, big and level of top, headed his class, and the Miller junior yearling Brawith Mint, one of the big sappy sort, beat the smooth dressy Illustrator. More rivalry developed in the senior calf class, where the mellow meaty straight-backed Serene Sultan won another blue for the Miller herd, his chief opponent being the big Huntley calf Red Champion, built on a less level pattern but wide in the hind rib and thighs. He carried more flesh than the third one. A very growthy junior calf was shown successfully by Mr. Jennings although not so neat and solid as Mr. Miller's white True Sultan.

Mr. Miller sent in two cows that outclassed their rivals. The red Lady Marshall carries a world of flesh on a frame of ample spread, although Wanderer's Trophy is of a tidier pattern, very straight-lined and wide. The white Miller two-year-old Lady Confidence is another of the blocky sort and much smoother of flesh than the thick Queenly. In senior yearlings the Miller entry Capacious Sultana, as her name implies, has an advantage in size and breadth as well as in finish. The attractive Sultan of Anoka character also distinguished the Miller calf Lady of Quality although she is scarcely so smoothly turned as the lighter fleshed Malvina.

THE RED POLLS.

Never in the history of the fair has the public been treated to such an illuminating presentation of the merits of Red Polls. The breed stood third in numerical representation on the ground. Always before there has been considerable divergence in type and there has commonly been a rear delegation of sub-standard merit. Surprising uniformity of pattern prevailed throughout the classes, when the fact is considered that the dual-purpose ideals of the breed demand a combination of characters. The breeders have made great advances in the last few years, and this show marks a culmination of efforts doubtless destined to bear much fruit. The results are evident. Straight backs, wide level hind quarters, deep middles, and neat shoulders constitute a foundation which supports a wealth of flesh in the dry cows and bulls and swings big soft udders swelling to capacious dimensions when fresh. There was no more difficult task in the cattle department than that assigned to Prof. J. W. Wilson, Brookings, S. D., of picking the intermediate type. Among animals unavoidably presented in various degrees of flesh in the older female classes it would test the judgment of a master breeder. He worked with great deliberation but close students of the breed took exception to a number of his ratings, which left some animals far down the list merely because they carried a bit more or less fat than others. There was a wealth of good material from which to pick and the rivalry of exhibitors was keen.

The typical Teddy's Best scored in the opening tilt, excelling in size, covering, smoothness and capacity of middle the neat Reno. He marched right on to the grand championship. The thin Ruberta's Goods has an exceptionally dep hind rib. In the two-year-old class a big smooth fat one appeared named Sir William, but he had to be content with a position below the more angular Breadwinner. The senior yearling Paul excels in character, quality and depth and stands on shorter legs than the very level Jay Rose or the coarser Luna Lad 15th. Considerable argument arose over the junior yearling class of ten in which two sons of Teddy's Best stood first and fifth. The first one is high set, deep chested and thin; the last in line is fat, more thrifty and shorter of leg although lacking somewhat in middle capacity. It was claimed that they should stand closer together in such company. The senior calves were led by a beautiful type combining a fair thickness of flesh with finish and great depth. The dozen juniors gave the judge considerable trouble. His choice finally fell on a rather small one of no great finish of back but great length of rib and a good hide, while a rather beefy muscular one came next and a growthy thin youngster third.

No breed could boast of a more representative class of aged matrons. Several have been patterns of the breed for a decade. The familiar figure of eleven-year-old Cora, winner of championships in former years, was conspicuous for the immense udder, long ribs and silky quality combined with a neatly padded frame and straight topline suggestive of a tendency to take on considerable flesh when dry. Fresh, as at present, she seemed to smack a little too much of dairy appearance to suit the judge and so she was left entirely out of consideration. Between five-year-old Lena, six-year-old Liza and seven-year-old Inas there was close competition for first place. Their final alignment was as named, the Clouss entry being conspicuous for her neat low-set pattern and large though not very shapely udder. She won the grand championship. The Arp entry Liza is larger and very deep, while her udder even when dry shows ample extension. Inas carries considerable beef but swings a good milk gland also. There were a dozen fine two-year-old heifers, and the blue decoration fell naturally to the very typical Gazelle.

A very close class appeared with the call for senior yearling heifers and at the next call a lot of fourteen exceptional junior yearlings continued the judicial difficulties. The big sweet-faced "breedy" Ida Loo boasts of such great udder development that her claims seemed undeniable. Breed character is also stamped plainly on the deep stately Pansy with which the Clouss herd annexed the chief honor in senior calves. Some of the others have larger udders. The showing of groups was very impressive. Eight herds, including forty head, fairly filled one side of the arena with Red Poll splendor.

THE BEEF STEERS.

The steer show was small in number of entries and smaller still in the number that reached the ringside. However, it developed a grand champion steer in Hazlett's Hereford calf Blanco, that was little short of sensational.

The Short-horn classes were not filled until the calves were reached, but the Tietjen winner was a very nice-typed sappy calf that showed at a disadvantage from a week's sickness. L. C. Oloff, a new steer exhibitor, showed a junior calf in beautiful bloom that met much favor from the ringside. He lacked somewhat in type and fell to third place. The grade Short-horns produced a good steer in John D., which is C. A. Saunders' two-year-old. He is a fleshy fellow and nice-lined, but lacks somewhat in shoulder covering and filling of outer thighs. He made a strong bid for grand champion, however.

W. J. Miller showed Angus without competition. C. A. Tow showed an excellent bunch of Herefords but had all he could do to handle the Cassady entries. The Hazlett calf was the pick of the breed.

The judges from each breed placed the grand champion ribbons as a committee. There was much less friction than usual in such cases and the awards were rapidly made. Frank W. Van Natta was unable to remain and J. P. Cudahy took his place. His work was eminently stisfactory and adds another name to the list of breeder judges.

THE DAIRY BREEDS.

A representative exhibit of dairy cattle occupied the east side of the arena each afternoon. At times the judges were working on five breeds at once so there was exceptional opportunity for such comparison as onlookers might wish to make. A generally close adherence to utility dairy standards was apparent in all the exhibits. Lively competition developed in most of the classes, with several exhibitors contending. Ayrshires, however, were shown only by Adam Seitz of Wisconsin, but the excellence of his cattle was so strongly in evidence that their appearance in the ring attracted much admiration.

THE HOLSTEIN-FRIESIANS.

Four herds of Holsteins, all of carefully winnowed material, were sufficient to present the breed in a favorable light. Familiar showring victors of the last few years were included in the number, and the remainder conformed closely to the same high standard of excellence. There were no thick shoulders, short ribs nor beefy thighs. Dairy conformation was pronounced throughout each class, and capacious shapely udders were the rule. The honor of passing upon so distinguished a company, representing the upper level of the heaviest milking breed in the world, was conferred upon Dr. M. B. Wood, Mankato, Minn., and he went about his work with evident appreciation of its responsibilities. On the whole he made a consistent alignment in most classes.

The sedate massive Rockdale Perfection De Kol proclaimed in the very first class that Iowana Farms would be heard from. He has tremendous capacity and a soft hide. Of the two White bulls the third-prize winner is really deeper and of somewhat more attractive type than the second, although the latter has a very strong back. The Nelson two-year-old, although rather highset, is more level of top throughout than his opponent, and likewise shows better finish. With yearlings also the Nelson herd was successful, but in the older calves, Frank White broke into prominence with a very stylish, masculine, deep chested, velvet-skinned youngster. The second bull is of less vigorous appearance but has a great middle. A growthy calf of much quality won among the younger calves.

A big business-like matron carried the Iowana Farms' standard to the front of the aged cow class. This Lady Ocean Queen De Kol, at five years of age, has a conspicuous depth of middle and ample spread to her shapely udder. The cow winning second place for Frank White likewise has an udder of great size, and it milks out to a very soft texture. Her mate coming next has greater abdominal and chest capacity.

Among the three-year-olds an outstanding winner and the grand champion was shown by Mr. Nelson, a heifer of beautiful front and form with silky quality, shapely udder and large veins. She has neater thighs than the next one as well as more apparent capacity than either the second or third. Seven typical two-year-olds filled their class nicely, and the victory went to Frank White on a young cow that has already produced 84 pounds of milk in one day. As might be expected, she has a huge mammary system, while her type and quality are of the best. A very promising neat heifer came next, but the one in third place has superior size of udder. A very sweet senior yearling of Iowana Farms was brought out in rather high flesh but with distinct dairy form and unusual udder development which won due recognition. Chief honors in the younger classes went to the White heifers. The junior yearling, a winner at Chicago last fall has outstanding form and udder. In a class of sixteen good calves of the older division the winner had an advantage in breediness and capacity as compared with her chief rival, and a great spread of rib also distinguished the leading junior heifer.

THE JERSEYS.

The Jersey classes were finely filled with numbers running up to a dozen and over in some of the younger divisions. Altogether it was an exhibit of rare merit. Animals of showring fame were plentiful and great families were represented. W. L. Hunter, Lincoln, Neb., an old time exhibitor, undertook the difficult task of assigning positions in the prize-list and at times found some little dissent from his views.

The famous Stockwell's Fern Lad, low-set, very deep, spare of form and stately of bearing had no great difficulty in following up to the grand championship his victory in the initial class. His chief competitor among the aged bulls was the darker aggressive Beauvoir's King, while the rather fleshy but stylish Combination Golden Prince had to be content with third place. A very "breedy" deep chested bull of extreme quality got to the top among eight two-year-olds. Viola's Elmhurst Prince, carrying considerable white, headed the yearlings by reason of his evident constitution and quality, although rather shallow of flank. Among the yearlings Western King's Chief, a stylish typical youngster of great depth, only won fourth although many would have rated him higher. There were ten of the older calves, two of which were conspicuous for excellence of type. The deep quality bull won first place, but his mate is a little finer of shoulder and boasts a bit more character of head.

Warder's Proud Beauty, a conspicuous prize-winner at last year's shows, secured the premier honors among eleven matrons and finally the grand championship. Her extreme depth of middle, great udder of the finest quality, enormous veins and striking breed character are features that brought her ahead of the smaller Couline, which has a very shapely mammary system and exquisite countenance. An immense udder that milks out well is possessed by Golden Maid's Princess Lady and she is stronger of back than the smaller Kate's Mabel. The seven three-year-old cows furnished a pleasing line-up in which a beautiful form and exceptional udder came first, a deep body, short legs and good udder, second, and a rather light middle and delicate build, third. The ten two-year-olds furnished some discussion because the two logical winners of first and second were not followed more closely by the sweet Rose Tulip's Sultana that only got fifth. She is of capacious build and has a very large udder with nicely placed teats. The first prize for senior yearlings went to a heifer of great milk gland and very pleasing type, although rather longer of leg than her mate winning second. Third prize was awarded to a heifer with an udder cut up deeply between the quarters. Some favored for this position the fifth heifer, a very deep-bodied sweet-fronted youngster of beautiful udder development although not in milk. Even more mammary expansion perhaps, although less body capacity, is possessed by the fourth heifer. The younger classes brought out numbers of promising sweet-faced daintily built heifers.

THE GUERNSEYS.

Small classes of Guernseys occupied the attention of Prof. W. P. Forbes, Lincoln, Neb., in the distribution of ribbons. Throughout the lots there was a uniformity of type and refinement of character seldom displayed by the breed. J. H. Williams of Wisconsin and Wilcox & Stubbs of Iowa, were the exhibitors, and deserve credit for making a favorable showing.

The vigorous deep-bodied Holden 4th had no competition in the aged class for bulls. His herd mate Bob Rilma was conspicuous among the two-year-olds because of the size, constitution, character and vim he displayed. The yearling winner has a very long rib, is very open between the thighs and has winsome quality. The second bull is of more muscular build. An advantage in head and top line distinguished Queen's Prince in the senior calf class.

A very good class of cows appeared, bearing ample evidences of milking capacity. The two at the top have great udders, and the first carries the gland higher behind although she is somewhat cut up between the quarters. She is a quality cow and evidently producing heavily. Twin two-year-olds of similar type secured the most desirable positions in their class for Wilcox & Stubbs, and the same exhibitors scored second and third on a pair of twin senior heifer calves.

THE BROWN SWISS.

Three herds of the hardy Swiss dairy breed claimed the admiration of the ringside and of Prof. W. P. Forbes who tied the ribbons. Allynhurst Farm and H. W. Ayers of Wisconsin, and M. T. Anderson of Iowa made the exhibition. In some cases it was thought by ringside critics that a trifle too much emphasis was laid upon size at the expense of dairy form.

The big burly typical Zell carried off chief honors among the bulls as is his custom. In the next class Myone Boy has somewhat more dairy shape than the winner although rather on the leg. The yearling Zell A is very growthy and has the long rib of his famous sire.

Twelve-year-old Upland Cuma, a rugged matron of tremendous capacity and heavy in calf, had a close call when pitted against the sweet spare long-ribbed Arlene which came out with an udder stretched to the limits of its great expansion. A little too much leg and a great udder are combined in Betty Allynhurst, while her chief rival among the three-year-olds has a larger bread basket. Somewhat more recognition of dairy type would have been secured in the two-year-old class if the deep-flanked Susan Arrand 2d had been placed above the higher-set although larger winner. Big growthy heifers, boasting character and mammary development, won the chief places in the younger classes. Faithful old Upland Cuma secured the purple ribbon among the females.

WITH THE SWINE.

Iowa with more than double the number of swine of any other state is well said to be the greatest hog-producing section in the world. This fact may help to account for the size and quality of this great exhibit of mortgage-lifters. While the total number of entries was about 700 head short of last year the pens were comfortably filled with 2,116 head, representing seven different breeds.

This shortage was due to the small crop of spring pigs, bad weather getting in its deadly work at farrowing time. This has caused many of the old-time exhibitors to give up showing altogether this year.

The quality of the exhibit was up to the standard of last year except in case of spring pigs which lacked size and condition.

The Duroc-Jerseys and Poland-Chinas were first in numbers, registering 894 and 722 head respectively. Interest in the Poland-Chinas centered around the large futurities stakes offered this year which brought out over one hundred head of classy spring pigs. E. S. Barker of Iowa was the big winner in this class, getting the three firsts. The aged boar prize was won by Model Wonder by Smooth Wonder 2d, but he lost grand championship to Robert's junior yearling Model by Big Knox, a remarkably smooth boar of medium type. Grand champion sow was won by Meharry on Louise Model by Bartar's Model, a sow of good medium type with lots of quality. Harvey Johnson was slow in tying the ribbons, being almost sick, but continued until the tying of championship ribbons when J. M. Stewart was called in to take his place. He adhered to a type having big frames. Lovers of less size and more quality were a little disappointed.

The Duroc-Jersey entries, while nearly two hundred short of last year, showed the usual quality and high standard of excellence which characterizes the breed. H. F. Hoffman sorted the rings which were so evenly matched that quite often difference of opinion easily arose on the selection of the winners. On the whole, pigs with backs well arched, deep sides and well finished were given preference over size, width of body and good feet. The aged boar class was strong. Many had Harding's Colonel Gano slated for first, but Prince Educator by Instructor was given the place because of his smoothness and finish. He was afterward defeated for grand championship by Waltemeyer's High Model by Golden Model 2d, a boar with a well arched back having plenty of size and a good pair of feet. The grand championship sow was awarded to Davis on Chief Maid by Valley Chief, a good serviceable kind. Where smoothness of form and finish counted more Hank's junior yearling Belle's Model would have won. Junior champion sow was given to Allen on a Crimson Wonder Again yearling.

The Chester White show was stronger than last year in number and quality of exhibits, a count showing 550. N. H. Gentry, Sedalia, Mo., judged these and also Berkshires in his masterly manner. The Hampshire show was also large. Five years ago the first Hampshires were granted a place in the swine department; this year there were counted 306 stripes. The exhibitors were very enthusiastic over the development of this breed. The Berkshire entries were small but some good ones were driven out. Rookwood Farm's champion boar Rival's Champion Best was a good one—smooth, with lots of quality and the best of feet. Also Iowana Farm's Robin's Girl, grand champion sow, was worthy of mention.

Representatives to the number of 100 of the Yorkshire and Tamworth breeds were found on the ground and judged by C. C. Roup.

AMONG THE SHEEP.

The show differed somewhat from that of former years as it was more of a test of results of breeding sheep at home. Usually the exhibit is dominated by imported sheep, but this year the foot-and-mouth disease has prevented importations and the American-breds were left largely to themselves to fight out the various classes. With this shortage of foreign sheep the total entries were practically as many as last year which shows that sheep husbandry in this section is on the increase.

The place of some of the old exhibitors who have retired from the business was filled by new men, several from Iowa making their initial appearance in the showring. These beginners came with sheep that they were not afraid to enter in the open classes and while lacking extreme fitting were representatives which appeal to the practical sheep breeder. These men are producing sheep on their farms at a profit by utilizing the cheap feeds which would otherwise be wasted, and as people are coming to realize the advantage of substituting mutton for beef on their tables the profits will increase accordingly.

Throughout the various classes with both the mutton and fine wools competition was keen, the sheep showing more uniformity of type than has been noticed in former years.

With the mutton sheep the Shropshire exhibit was the largest with about 200 head, followed by ten Oxfords and Hampshires. The Shropshire exhibit brought out a type of sheep that looked good from the utility standpoint, having plenty of size, uniformity and quality.

FIRST GET OF SIRE, OXFORDS
Iowa State Fair, 1912

J. C. Duncan, Lewiston, N. Y., tied the ribbons in the mutton classes in a satisfactory manner, giving McKerrow & Son of Wisconsin, champion ewe, ram and flock in the open Shropshire class. E. L. Bitterman was the largest exhibitor and winner from Iowa. The classes in the other mutton breeds were small but Hechtner's exhibit of Oxfords and Postle's Southdowns are worthy of mention.

This year brought out excellent fine-wool sheep in the opinion of Prof. Miller of Montana who did the judging. King Bros. of Wyoming were the principal winners in the Rambouillet classes capturing both the champion ewe and ram. Cook won most in the open class, with honors in the Iowa classes evenly matched between Blakely and Rail.

THE HORSE DEPARTMENT.

A slight contraction in numbers was evident in the horse department, owing to the absence of a few prominent exhibitors, whose lately imported animals could not be made ready in time for exhibition. However, only the older stallion classes suffered perceptibly from this cause as increasing interest on the part of American breeders resulted in a larger showing of females and young things. It was the general opinion that with few exceptions the average character of the entries showed improvement over former years. Clydesdales in particular made the best showing the breed has ever enjoyed at this fair, and many of them were bred in this country. In fact, each breed included more home-bred animals in the open prize-list than has ever before been the case. All along the line it was a breeders' show and a good one.

The enlarged horse barn accommodated about 475 head and exhibitors expressed much appreciation of its convenient arrangement, ample lighting and ventilation facilities. With the exception of two or three every one who made entries was on hand with his horses. There was some decrease in numbers of animals, however, from the original entry list and the final count showed 775 head in the stalls.

From a popular standpoint probably the greatest interest was found in the Morris six-horse team which made daily exhibition drives about the grounds, in front of the grandstand and in the pavilion. Wherever these horses were, whether in harness or in their stalls, they were the center of a crowd of admirers. They were brought out in fine bloom and shown skillfully by Frank Housley, creating a favorable impression for the draft horse and for the Clydesdale breed which they represent.

There was a very strong delegation of ponies and light horses, and saddle horses in particular made an exhibition that would be hard to excel at a state fair anywhere. The most disappointing feature of the horse events was the necessity for judging the light horses mainly at an outdoor track south of the barns where comparatively few people could see to advantage. Such classes of these as were judged at the evening performances in the pavilion were the chief attraction there.

The work of judging progressed smoothly. Rules excluding visitors from the ring were more fully observed than formerly and Prof. C. F. Curtiss and his able assistants called the classes with the promptness for which this fair has become famous. The horse department was a live place and attracted a live crowd of progressive Iowa breeders.

THE PERCHERONS.

Percherons of course attracted most attention. It was largely a breeders' show and was accordingly all the more highly appreciated by the hundreds of Iowa farmers who are doing their farm work with Percheron mares. They saw here what others like themselves have done in producing horses fit to show anyhere. The futurity classes for yearling Percheron stallions and fillies aroused more speculation and comment than any other feature of the show. Likewise in the open classes the American-bred ones, which were numerous, were closely watched. Judging by the tone of discussions heard about the ring, farmers have at last come to the conclusion that there is no reason why they cannot raise as good Percherons in the cornbelt as anyhere in the world. Some are doing it now, and the number of those thus successfully engaged is constantly increasing. When Rosine added another open championship to the list of such honors which H. G. McMillan & Sons have won with American-bred mares, and W. S. Corsa headed the open classes for yearlings with colts and fillies of his own breeding the efficacy of American soil, feed and brains in this line of endeavor was convincingly demonstrated.

To Wm. Bell, Wooster, Ohio, was entrusted the responsibility of assigning positions. His excellent performance of a difficult task serves to increase the confidence already generally expressed in his discriminating knowledge of draft horses. On the futurity classes of yearlings he was assisted by Peter Hopley, Lewis, Ia.

An even dozen aged stallions faced the judge in the first class. There was not a great surplus of fat in evidence, but the spare form in which most of the candidates appeared aided in getting at the genuine merit of the horses. In most cases the lack of flesh was due to heavy breeding service this season. A very stylish high-headed gray came to the top for McMillan & Sons. This horse Incruste is exceptionally well molded over the top, has a neat set of legs and goes with all the dash one could wish. The Truman gray Interprete following in second place is a wide substantial kind with plenty of middle, a good quality of bone and a free easy stride. Seeley's gray coming third is now quite thin but shows the essentials in pleasing fashion. In the championship contest the McMillan gray moved even better than on the first day and won a notable victory.

The three-year-olds numbered sixteen, and a very strong lot they were. The judge gave plenty of examination to all entries, but it was early apparent that the winner would come from the Dunham lot. Size was more conspicuous there than elsewhere and it was well supported by underpinning of ample strength. The largest-framed colt was Dunham's black Joujou, a son of Etudiant. He is not fat but possesses a pleasing balance of build, bone, quality, step and style that are hard to surpass. The next colt has perhaps a stronger middle but he also carries more flesh. His strong chest, good quality and activity at the end of the line are conspicuous features helping to land him a notch above the third Dunham colt. All three of these are considerably larger than the fourth one.

The thirteen two-year-olds upheld the reputation of the breed for early maturity. Size was conspicuous, and in none more so than in the Dunham quartet which caught the ribbons. These are all colts with plenty of stretch. Their frames are large but not loaded to the limit with fat. Some others unplaced looked a little lower-set and heavier for their inches at present, but balance and frame gained due recognition. The winner Kourbet is a powerful dark gray having a chest, back and croup of exceptional substance, while in bone, foot, quality and action he suits a critical taste. A dressy black having scarcely so much middle but very strong hindquarters came second and a very deep-chested big-boned compact black, third. This colt was fortunate, some thought, in getting ahead of the dark gray son of Calypso named Lunar—not a fat one but smooth as an egg, set up on ivory-like bone and going with great style.

The greatest interest centered about the class of seventeen yearlings, all American-bred ones and most of them brought out with great size and fine bloom. The entries were the same for the open class and the futurity. A pair of Carnot colts found their way to the head of the line for W. S. Corsa. The gray Carlant received preference by reason of his exceptional bone, feet and quality combined with a great heart girth proclaiming constitution to match his strong underpinning. He is a good colt at both the walk and the trot. The mate Carbon, a black, is scarcely so big of bone but has more width and levelness of croup and more style. The black Matador 2d from the McMillan stable, easily third, is a colt of pleasing finish and character, although not quite so large. There was a line-up of seven fine stallion foals, an evidence of the breeders' interest in the show. Positions ran about as the sizes graduated from large to small. A black youngster of much "stretch" of frame won the blue ribbon, a big active fellow came next and a very "dressy" gray followed in third place. A very sturdy stylish young foal by Calypso and out of the champion mare Rosine excited much admiration although the judge did not consider him developed sufficiently to gain a place in the list.

There were half a dozen aged mares, all of creditable stamp and some about as good as ever stepped in a showring. No time was required to detect the indisputable claims of the big black five-year-old Rosine by Olbert. She is suckling a fine young foal and is not at all fat but weighs 2,100 pounds. Probably no mare ever stood on a better front leg, and her hind leg is also extraordinarily strong and clean. Her bone is very big and its texture like steel. A powerful build distinguishes her at once whether viewed from in front or behind, and she trots with an ease suggesting tremendous vitality and strength. She has filled out considerably since the last International show, when she stood fourth in a splendid class. It was early predicted that she would be the champion and she fulfilled expectations. Some importers said that they did not see her equal anywhere in France this year. Her mate America, of much the same stamp, is also a rare good one, somewhat superior in bone to the big flash gray Gelive brought out in fine form by Finch Brothers. Seven three-year-old fillies were led by a pair of well matched upstanding grays from the Dannen stable. They possess bone, quality, and growthiness to an unusual degree. The two McMillan fillies by Calypso are of a lower-set, wider, roomier, sweeter stamp, but not so large. The half-dozen two-year-olds aroused considerable discussion. The first two were outstanding, and each in her way excelled. The Dannen entry is a little taller and heavier, and more strongly supported below the knee, while the McMillan entry, much on the same stamp as her dam Rosine, is wider, sweeter of face and stronger of hock. It is the only instance in which much dissent from the decisions was expressed. The Finch filly is a good big one but thin.

There was a great line-up of seventeen home-bred yearling fillies shown in the open class and futurity. Their like has never been seen in a Percheron showring in this country. When they had all been examined and moved it became evident that Mr. Corsa would secure the first three positions, but some shifting about was done before these daughters of Carnot were lined up to the satisfaction of the judges. All three are distinguished by bone, unusual size and quality, with feet to match. Probably Lottano is a bit the heaviest, and she has a sweeter front than Folito, but the latter is stylishly finished and excels somewhat in hocks and feet. The third filly is possibly more muscular than either of these.

It was a great victory for Carnot breeding. Geneseo Gem came out with great size and fine form. There were three neat filly foals presented and the blue decoration fell to another Carnot filly, a very muscular stylish little thing.

By winning both championships in the open classes H. G. McMillan & Sons also secured both Iowa championships. In the classes for animals bred and owned by exhibitors they were also successful in winning both championships, thus making six championships in all. This is a record that in recent years has not been equaled at this fair.

THE BELGIANS.

There were few individuals of outstanding excellence among the Belgians, although quite acceptable classes were in most cases presented before Alex. Galbraith, DeKalb, Ill., for positions in the prize list. He demanded well fashioned underpinning and clean joints and feet, and accordingly found it necessary to turn down some otherwise good individuals. Some exhibitors felt that he gave scarcely enough recognition to the distinctive blocky pattern of the breed, but he would have done so had more good material been available for selection. In the futurity classes he was assisted by J. G. Truman, Bushnell, Ill.

A heavy wide big-muscled blue roan bore off the first blue ribbon. This stallion of the Lefebure lot is a typical Belgian with two good ends joined by a thick middle. The light roan shown by Charles Irvine has scarcely so much weight, bone or action, but silkier quality. The chestnut coming third is a bit stale in legs but has the bone and muscle denoting great strength. At the trot he goes with exceptional ease. The sensation of the older stallion classes appeared among the three-year-olds. George Eggert's big bay colt has 2,400 pounds of weight without an undue amount of fat, as his frame is very large. A striking characteristic is the knifelike quality of his big bone and the cleanness of his joints. He wears No. 11 shoes. In action he gives a wonderful exhibition of harmonious movement for so large a colt. The stablemate coming second, is of true Belgian build and stamped with abundant quality. A very likely colt if in condition, came third. This big thin chestnut D'anube, has been sick, and so did not appear at his best, but he has a powerful well made frame. Among a dozen two-year-olds the thin chestnut Picha, shown by Finch Brothers, was conspicuous for his excellent underpinning, which with his acceptable action resulted in securing chief honors. A roan of more substance, strong hocks and unusually good feet came next for Trumans, excelling in underpinning the other roan Finch entry.

The futurity was judged at the same time as the open class of yearling stallions and brought out some excellent colts. The second futurity colt was not in this open class. A big wide chestnut headed the lot as finally aligned. Finch Brothers brought him out displaying great substance combined with a well preserved quality of his neatly fashioned, cordy legs. Second in the open class went to an Irvine colt shown in rather light flesh but made right from the ground up.

Finch Brothers scored a victory in the aged mare class of seven with the big upstanding roan Laura, shown rather gaunt but possessing great propelling muscles and ample leg timber of the hardest sort. She is stronger in back than the bay Flora, but both of these are excelled in depth of middle by the blocky bay Madam 2d that came third. The winner of the next class is also rather high set for the breed, but she is the largest of the three-year-olds and has exceptional style and quality with big bone and strong hocks. The Irvine filly is of distinct blocky Belgian mold, very wide and compactly joined together but her great bone has not such knife-like texture as that of the small neat roan Albonie shown by Mr. Lefebure. His outstanding chestnut two-year-old Suzette bore off the blue ribbon in her class of ten. Her all-around balanced drafty pattern and finish are a great credit to American breeding. A substantial roan standing on strong timber came next for Mr. French, followed by a strong-backed bay.

A wide bay named Elsie won first among the eight yearling fillies which were also shown in the futurity. She has great muscular development. Next came the thin chestnut Lafleure. Both have exceptional underpinning. The second one is considerably stronger in back than the third one in line. An injured ankle causing lameness held the sprightly, beautifully formed Miss Fosteau down to fifth place. An upstanding growthy roan foal sired by Jupiter secured preference among the little fillies over a small but very solid muscular youngster that came next.

THE CLYDESDALES.

Clydesdale breeders were out in full force with a collection that for numbers and excellence has never been equaled at this fair. Such an exhibit in the breeding classes combined with the showing of the Morris six-horse team to display the merits of the breed to best advantage. The showring events were carefully watched by studious critics of underpinning and action, and tempting offers were made for youthful prizewinners.

When Wm. McKirdy, Napinka, Man., reached the fair grounds, he said he felt that he was the victim of a conspiracy, for he had been invited to judge a small show of Clydesdales and found a big show and far better horses than he expected to see. He considered the showing equal to any he had seen in western Canada this season. He worked carefully over the classes and rendered few decisions that were not sanctioned by the able Scottish critics before whom he worked. On the futurity classes he was assisted by Alex. Galbraith, DeKalb, Ill.

Galbraith & Son had the honor of showing the four-year-old brown Dreadnaught to victory in the opening class of the Scotch breed. He is a horse of all-around attractiveness but pleases especially with his nice "kits," great bone and massive build. He also carries himself along with acceptable ease. The bay Rinaldo coming next for Leitch added another notch to his record of favorable showring appearances. He is perhaps a little heavier horse than the winner and steps along well. Although this whole class made a good impression, people were hardly prepared for the exceptional ring of thirteen three-year-olds which followed. Even in this splendid class a comparatively easy winner was found in McLay Brothers' already famous King Norman. He is good from top to bottom, large and also stamped with quality all through. His trot is a little straighter than that of the next one. This brown from the Galbraith stable has great substance of top, but is not showing so well in legs as the light bay Prince Cedric. This latter is a nicely turned colt and set up on legs to delight a Scotchman. His style and finish are quite commanding and he carries more flesh than the Leitch colt.

Seven good two-year-olds made competition sufficient to excite several views as to their placing. There was not much doubt about the rightful winner, the sensational Osco Pride. He is not the largest colt but is a veritable Hackney in action, and his compact shapely mold, stylish front and long pasterns won universal praise. Another bay youngster of Mr. Soderberg's breeding came second. Built substantially, especially in underpinning, he also bears a bit more of distinctive character in front and bottom than the good thin strong-going brown that got third. The fourth colt was held down by a slight injury, but his character and substance are undeniable. Some strongly favored the fifth colt for a higher rating in spite of his neglected feet for which the judge turned him down.

The seven yearling stallions shown also in the futurity attracted much notice to their splendid shaping of hocks and ankles. The easy winner in the class is a colt badly splashed with white but of unusual bone and large feet brought out in growing condition by the Galbraiths. Rarely have such thick stifles been seen on a Clydesdale youngster, and his action meets the expectations aroused by a sight of the clean hocks and lengthy pasterns. He has much more substance but less style than the bay Monarch shown by J. Leitch & Son, which had a close rub from the brown Baron Caliph, a colt standing on excellent "kits" and bottoms. The McLay entry proved disappointing in action and so was relegated to a lower position than his pleasing character and strong build would indicate. Only one foal was shown.

Nine aged mares sustained the claims of the breed to preserving clean joints at hard work and breeding. Some were thin from the recent discharge of their duties but character and action were evident. A very vigorous-looking brown mare that has done a hard season's work won favor for Mr. Soderberg by reason of her deep chest, splendid shape, quality of bone and joints and elastic step. The Hixson mare has rather larger bone, deeper heels and more width of heart. Lady De Bathe is thin from suckling a foal and so did not support the claims of her excellent bottoms for higher recognition. McLay Brothers brought out the very sweet "dressy" Graceful Lady in such fine bloom and manners as to score an easy victory in the class of three-year-olds. A very muscular thin chestnut came next. There were ten two-year-old fillies. Mr. Hixson showed the winner May Queen, a big upstanding bay extra well shaped in the joints. Considerably more substance is possessed by the smaller big-boned Osco Rose, which is more elastic in underpinning than the smoothly turned Leitch entry that won third.

Like the yearling stallion futurity-winner, the Hixson filly Lady Caliph has the best of bone and shaping in her legs, and she secures a great grasp on the ground at her long easy stride. Probably the best fashioning of the lot is seen in the body and croup of the big Princess Mae coming second, but her action is sluggish. The bay Osco Belle is much better of shape than Irene, but the latter takes no discount in underpinning. A sweet shapely chestnut won preference among the three filly foals, with a more muscular heavier framed youngster giving her a close rub for that honor.

THE SHIRES.

The Shires have at other times been better represented than this year. The Truman entries were the backbone of this show both as to numbers and character, as the prize-list plainly indicates. However, other exhibitors were especially conspicuous in the yearling futurity classes for American-bred colts and fillies. R. B. Ogilvie, Chicago, Ill., made the rating. He laid especial emphasis on the shape, quality and soundness of underpinning, and it is gratifying to record that few of the old-fashioned wooden-legged kind came before him. His decisions were heartily endorsed at the ringside in nearly every instance. With the futurity classes H. O. Weaver, Wapello, Ia., joined in the work.

Five massive Truman stallions won all the prizes in the aged class of eight. The front of the line was occupied by the 2,200-pound bay Dunsmore Willington Boy 3d, impressive of front, powerful of coupling and set up on great timber. The next one is thin but excels in quality of bone, hocks and action and the third is of much the same pattern. The line of seven three-year-olds also started one, two, three for Trumans. The thin active brown Lord Carlton, flashing big shoes and flat glistening shanks at every step, took the lead. Dunsmore Royal Lad is larger and wider but lacks the graceful outlines of the winner. Superior action won his position in preference to the good gray March Pioneer. Like all of Mr. Ogilvie's selections, the victorious two-year-old Carlton King is splendidly furnished in canons and joints and sprightly on the move, and he has a pattern of top amply to support these merits. He was an easy winner for the Trumans and was followed by three promising stablemates.

The dozen yearlings presented divergent claims for favor. An imported gray finally came to the head of the line for the Trumans because in spite of thin flesh he is deep of chest and stands on large bone, shapely joints and wide bottoms. Beside him stood the Rittenhouse futurity winner, a bay distinguished among the lot for his extreme style, beautiful finish, excellent turn over loin and croup, and full round middle, while he has about as much bone as the gray and is furnished with much finer though scantier feather. His action is straight and his joints remarkably clean. An opinion expressed at the ringside was to the effect that the decision savored more of prophecy than of due recognition of acceptable showring condition secured without any sacrifice of quality in underpinning. An upstanding McCray colt of great bone but light middle came third, beating his stablemate also in level formation of croup. There were a couple of rugged stallion foals.

An easy triumph in the aged mare class awaited the nicely fashioned, sturdy, clean-going bay Dowsby Sunbeam, which Galbraith & Son bought of the Trumans last winter. The bay Nottingham Energy, smaller, more snugly made and less attractive in underpinning, came in readily second. The front of the line of three-year-olds was conceded to the big muscular grand-fronted bay Pattie shown by the Trumans, with second place falling to a nicely framed, thin brown of Finch Brothers. Bone substance and quality of timber scored in the class of two-year-olds, bringing two promising Truman entries to the front.

The seven entries in the regular yearling filly class were also shown in the futurity event. Two Surveyor youngsters added fame to their sire by occupying the leading positions. Paramount Esther is particularly roomy, muscular and strong of bone, while superior to Lady Trenant in back and croup. The chestnut Lincolnshire Queen shown by Finch Brothers has exceptionally well fashioned joints of the hardest quality but looks drawn in middle beside the other two. These three were easily the cream of the lot. Three good filly foals ended the single classes.

THE DRAFT HORSE BREEDERS' FUTURITY.

The National Draft Horse Breeders' Futurity established by "The Chicago Daily Live Stock World" under the supervision of J. H. S. Johnstone made provision this year for both stallions and fillies foaled in 1911. The event has encouraged breeders to develop their likely youngsters as never before. These classes were all judged Wednesday noon, and the open classes for yearlings were placed at the same time, as they correspond closely in entries. Comments on the winners appear in connection with the open classes, where the names of the judges are also given. Something like thirty-four Percherons, sixteen Belgians, fourteen Clydesdales and nineteen Shires appeared in the futurity classes. The most sensational ring for closely contested positions all along the line was the class of seventeen Percheron fillies.

DRAFT GELDINGS AND MARES.

The enthusiasm of farmers over the breeding of draft horses is fostered under the plan of Prof. Curtiss which allows liberal prizes for grade geldings and mares. R. B. Ogilvie made the awards, selecting rigidly for horses of serviceable stamp and furnished right at the ground. It is not the top but the feet and legs in which the exhibitors could make the most improvement in their horses.

THE SADDLE HORSES.

Any fair might be proud to have assembled so large a delegation of well bred, well mannered saddle horses. Nearly every class brought noted horses together. The sensational events of the show were those in which the famous stallion Astral King and the brilliant powerful gelding Kymokan appeared. Astral King won the $1,000 stake at the Mexico, Mo., fair a few weeks ago. By a magnificent exhibition he won the stallion class for five-gaited horses here. In a large class of mares and geldings Kymokan also proved to be the popular as well as the official favorite. His nearest rival, Gingerbread Man, showed an easier canter, but the gorgeous rack of Kymokan and his splendid proportions when stripped overcame opposition. Walter Palmer, Ottawa, Ill., made the awards.

STANDARD-BRED TROTTERS.

A select lot of standard-breds filled the classes which came before W. A. Dobson, Des Moines, Ia., for awards. He insisted on a good business trot together with character and serviceable conformation.

THE MORGANS.

Morgan breeders gained considerable prominence by reason of the useful type of roadsters which they presented. Geo. M. Rommel, Washington, D. C., made the awards to the evident satisfaction of exhibitors. He gave preference to horses approaching the historic compact upheaded Morgan type even though they did not display showy action.

THE SHETLANDS.

The number of Shetlands was not quite up to the big record of last year but there was some improvement in average quality. There is the keenest kind of rivalry among Iowa breeders and they select and show their stock to win. Prof. W. J. Kennedy made the awards.

OTHER HORSES AND MULES.

Many of the standard-breds were also shown in the classes for American carriage horses, W. A. Dobson judging. J. R. Peak & Son, Winchester, Ill., won many prominent positions including second with Tommy Doyl in the aged stallion class, where O. J. Mooers' Advance Guard was first. The Peak horses were second and third in three-year-old stallions, first in yearlings, second and third in three-year-old fillies, second in two-year-olds, first in foals and first for stallion and three of his get. Wild Rose Farms won first in two and three-year-old stallions and two-year-old fillies. Mr. Mooers' Advance Guard was the champion stallion and Mr. Mooers also won the female championship.

Tommy Doyl won a blue ribbon in the champion roadster class, and he and Tommy Piper captured this prize for pairs. There were some good runabout classes in which O. J. Mooers secured the best positions. A. L. Champlin showed the winning family turnout.

In classes for highsteppers Wild Rose Farm of Illinois was the most successful exhibitor, followed by O. J. Mooers of Missouri and A. L. Champlin of Iowa.

The claims of Welsh Ponies for popular favor were upheld by Geo. E. Brown, Aurora, Ill., and Geo. A. Heyl, Washington, Ill., each of whom exhibited a choice collection.

Mules of excellent size and nerve combined were shown by F. L. Hutson, who won most of the blue ribbons and also the championship. A. L. Foster, W. E. Kingdon and A. L. Russel were his chief competitors. Jacks were shown by Dierling & Otto.

STUDENTS' JUDGING CONTEST AT DES MOINES.

The Boys' Judging Contest at the Iowa State Fair on Aug. 24 surpassed any previous mark by fifty per cent and established what may be termed a world's record. There were ninety-eight boys from all parts of the state entered, thirty more than participated in last year's contest. Each contestant was a farm boy under twenty-one years of age who had never taken a regular course in any agricultural college. The prizes offered were scholarships in the Iowa State College worth $200, $150, $125, $100 and $25 respectively, the last to apply to a short course session.

Two rings each of draft horses, beef cattle and swine were judged in the forenoon, and two samples of corn were placed by the boys in the afternoon. This was the ninth contest at the state fair and the growth from the four or five first entered to the present number has been remarkable. The boys' camp contributed fifty of the contestants. It is probable that the judging work will be made a part of the programme of the camp for all of the boys next year.

The holder of the first scholarship is a boy who has pushed rapidly to the front as a poultry judge entirely on his own resources. He is a recognized official at Iowa county fairs although only nineteen years of age. The winner of third place is a brother of the two Dowells who won the Gray beef cattle and Dinsmore draft horse medals at the Iowa State College in 1911.

Wallaces' Farmer, Des Moines, Iowa.

It was to be expected that the Iowa State Fair this year would be successful, and the expectation was realized. Taken all in all, it was the best and most representative State Fair which has ever been held in the state, and this is equivalent to saying that it was the best agricultural fair which has been held in any state. Although much remains to be done to make it everything the Iowa State Fair should be, each year witnesses decided progress. One by one the crude buildings of the earlier days are passing away and are replaced by substantial buildings of brick, with concrete floors. The system of walks and drives is gradually being extended. Increased provision is being made constantly for that class of exhibits which has, in the past, been obliged to seek shelter under the open skies or flimsy tents. While heavy rain would seriously interfere with full enjoyment of the fair, the time has gone by when people who really wish to attend it are deferred by cloudy skies. There are now on the grounds enough well-constructed buildings to afford shelter and entertainment even with unfavorable weather.

The attendance was not as great as had been hoped, and not nearly so large as it would have been had the railroads made the reduction in rates. Iowa is entitled to reduced rates to the State Fair—not because it is the State Fair, but because the service rendered is not worth the usual two cents a mile. The fair traffic is very large; the cars are crowded to the limit, many people standing for fifty miles at a stretch, and suffering all kinds of inconvenience without complaint; regular schedules are not maintained; in fact, it is cheap service all around, and worth considerably less than the regular service. The east and west railroads are regularly making very much lower rates per mile to western points than they were asked to make for the State Fair. Since they persist in adhering to the short-sighted policy which they have always followed n: Iowa matters, the question should be fought out either in the state railroad commission or in the legislature. As noted in our editorial columns last week, an appeal was made to the commission. Messrs. Ketchum and Palmer held a star chamber session without notice to Mr. Thorne, the third member, and decided that they had no authority. By the time Mr. Thorne learned of this action and the case had been reopened it was too late to take action. This matter should be threshed out before another fair. The commission undoubtedly has full authority, and on a proper showing of the character of the service rendered, there should be no hesitation in reducing the rates another year.

From every section of the state came stories of bountiful crops. It appears certain now that if frost does not disturb the corn crop, it will be the largest we have harvested for many a year, and, taking all crops into consideration, it seems to be the unanimous opinion that never before has the earth yielded so bounteously to the Iowa farmer. Remarkable yields of winter wheat are reported, some running as high as sixty bushels to the acre. The oat crop seems to have been heavy throughout the state. Pastures have been luxurious, and there will be plenty of hay to spare. The Iowa farmer chanted the song of plenty at Des Moines last week.

It is not possible to secure exact information, but it seems conservative to say that thousands of families came to the fair in their own automobiles, and a very considerable percentage of these were farmers. The main avenues on the fair grounds were lined with autos backed up side by side for half a mile in either direction, and there were hundreds of them under the trees in the camping ground. The automobile has got to be about as common as the horse on the Iowa country roads, and the number being bought by farmers seems to be steadily growing.

An increasing number of those who come from a distance are taking advantage of the camping privileges on the grounds. This really forms the most comfortable and most delightful way to see the fair. With a well-floored, commodious tent under the beautiful trees on the higher ground to the east of the main fair buildings, one can enjoy a most delightful outing and see the fair with the maximum of comfort. There is no rushing and crowding for a strap in the street car or for a chance to stand in the aisle of one of the crowded railroad cars. Being on the grounds early in the morning, the exhibits of chief interest may be examined at leisure before the crowds from the city fill up the space, and the tent is always there, offering a restful spot when tired of sight-seeing. This year the camping ground was laid out in streets, and the tents numbered, making it possible to locate friends with the minimum of trouble. The only trouble this year was a lack of tents to meet the demand. By Tuesday morning, every available tent had been taken, and hundreds were disappointed.

For many years Iowa has enjoyed the distinction of having about the cleanest state fair in the country. While there have always been shows that we might better have done without, there has been an absence of the most degrading sort, which are found on so many other state and district fair grounds. This year the Iowa State Fair took a decidedly backward step. A midway was established, lined on either side with side-shows, and so-called "attractions" of all sorts. We presume some of these were not particularly objectionable; for those who like that sort of thing they were probably about the sort of a thing they would like; but there were three or four, or possibly more, that had no business on the Iowa State Fair grounds, or upon any other fair grounds frequented by decent people. We do not know what sort of exhibitions were given on the inside of these tents, but the samples exhibited on the outside, and the leers and insulting remarks of dirty-mouthed barkers were sufficient in themselves to justify ejection from the grounds forthwith. Surely the directors of the Iowa State Fair have misinterpreted the desires of the people who attend it if they think they want any such shows. The argument that such things are necessary to draw a crowd was long since exploded in Iowa. The people who are attracted by that sort of thing are not at all needed to insure the success of the Iowa State Fair. The midway should be done away with, and the stream of filth which flows from it should be dammed up once and for all.

The Baby Health Contest inaugurated last year was one of the most attractive features, and furnished any amount of entertainment for those who could get near enough to see. Some hundreds of babies were entered in this contest. They were taken into a tent and one at a time subjected to the most searching examination by physicians and nurses. Weighed, measured, tested for strength, punched, poked, and examined in every way possible, while the anxious parents exhausted their efforts to keep them looking cheerful and happy, and the interested spectators roared with laughter as an occasional baby protested vigorously against what he considered mishandling by cruel strangers. If this contest is continued, it is perfectly evident that a very much larger tent or space in one of the larger buildings will be needed another year. This feature not only affords a vast amount of amusement and entertainment to the spectators, but it teaches lessons which will contribute very largely to the health and development of the babies in the future.

The building given over to the use of the Agricultural College was, as usual, filled with most interesting and instructive exhibits of various kinds. There were models of silos of the principal styles of manufacture, exhibits showing the effect of various crops and of various rotations in the production of crops, a soil map of Iowa showing the variation in the character of the soil in the different geological formations, a collection of the different varieties of grains, samples of the principal noxious weeds, and a large number of other equally instructive exhibits. The only trouble with this exhibit is that the building is somewhat out of the ordinary path, and consequently thousands of people do not find it. The next legislature might well consider the erection of a very much larger and better arranged building, located centrally on the State Fair grounds, and given over entirely to exhibits to be made by the Agricultural College. We can not imagine any way in which $50,000, for example, could be spent so well at Ames as in the construction of a building of this sort on the fair grounds. It would afford an opportunity to present object lessons to many thousands of Iowa farmers who will never have the opportunity to get them in any other way.

Something will have to be done to improve the transportation facilities between the fair grounds and Des Moines. The crowd is now handled by the street railway and by the Rock Island shuttle trains. On days when the attendance is largest, anywhere from an hour to two hours is required to get back and forth. There has been more or less trouble in this matter for several years, but the increasing attendance at the fair now makes it a matter which must receive the attention of citizens of Des Moines.

Following the custom established some years ago, night shows were put on in front of the grandstand and also in the stock pavilion. The show in front of the grandstand this year was in the nature of a frontier days entertainment, and consisted of a horse-bucking exhibition, trick roping by expert cowboys, handling Texas steers, driving and riding buffaloes and steers, an Indian war dance by a band of fifty Sioux Indians, trick riding of various kinds, and an attack by the Indians on an old-fashioned stage coach and prairie schooner, with a rescue by the cowboys. The show was followed by an exhibition of fireworks. It was a good, wholesome entertainment, and well patronized. In the live stock pavilion each evening a horse show was put on, which attracted fairly large crowds. These shows would have been more liberally patronized had the transportation facilities been adequate for getting downtown afterwards. On the nights when they were most largely attended, many people were not able to leave the grounds until midnight.

About one hundred boys from the different counties of the state earned a free trip to the fair by writing essays on Iowa. These boys were encamped on the grounds. They made themselves useful by policing the grounds in the morning and taking up the tickets of those who remained over night. In the afternoon and evening they were used as ushers for the evening shows. The boys had a good time, but before the week was over many of them were inclined to doubt whether they had received a free trip to the fair. They worked long hours, and had less time for sight-seeing than many of them had hoped for. This will, no doubt, be remedied another year. We are quite sure that the fair officials had no desire to impose upon the boys or to give them more to do than could be fairly considered as good for them. A year or two's experience is required to get a thing of this sort to running smoothly. Fred Hansen, the Y. M. C. A. county secretary, and Leonard Paulson, the high school Y. M. C. A. secretary, took good care of the boys in camp.

The exhibit of fruits and grains and the individual farm exhibit in the agricultural building were by all odds the best which have yet been made. The increasing number of exhibits made by individual farmers is most satisfactory, and it is evident that if this feature continues to grow, more room must be provided.

The live stock exhibit was first-class in every respect. This will be dealt with at length by our special staff. The weather permitted showing many of the horses in the open air south of the horse barns, thus relieving the congestion in the live stock pavilion.

Ninety-eight boys competed for the five scholarships at the agricultural college offered for the best work in judging live stock. They passed upon two classes of draft horses, two of beef cattle, two classes of hogs and also two classes of corn. Having made their awards they are required to give their reasons for their placing, putting these in writing.

THE STOCK SHOW.

For some years Iowa has enjoyed the reputation of making the largest and best annual exhibit of pure bred stock found at any of the state fairs. Her exhibit this year, as witnessed by the many thousands who attended the fair last week, well maintains this good reputation, and, although the first state fair of the season, the exhibit will hardly be excelled by any of the state fairs to follow. Some idea of the value of the stock on exhibition may be had from the estimate the fair association put on the prize winners in Friday's parade, which they advertised as a "million dollar parade." This did not include the hogs and sheep, as they cannot go in the parade, but only prize winning horses and cattle. Yet in numbers the cattle, swine and sheep departments reflected somewhat the decrease in stock as shown by recent government statistics, and by the prices at the leading markets, where beef cattle have recently sold higher than ever before. These prices have put new life in the stock business and the stock men who are still in the business are feeling better than they have for some years.

THE SHORT-HORNS.

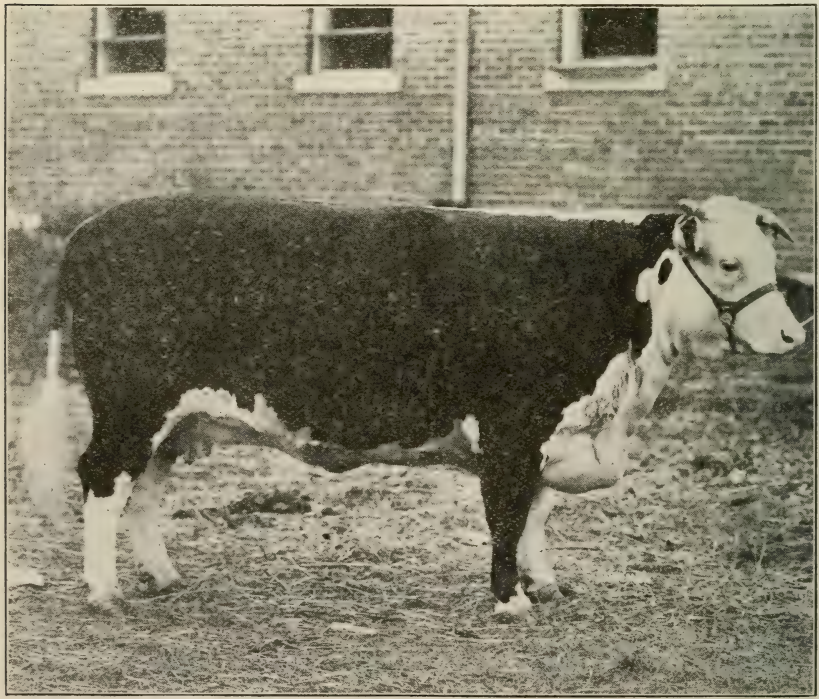
Twenty-five Short-horn exhibitors from half a dozen different states competed for the honors in the Short-horn classes. Twenty of these exhibitors were from Iowa, some of which were in the amateur class, while most of them had entries in only a few classes, and some only single entries. Not all who made entries were exhibitors, Messrs. White & Smith of Minnesota, being one of the strong exhibitors who failed to arrive. On the whole it was a strong showing of this popular breed, although not the largest nor strongest Short-horn show that has been seen at the Iowa State Fair. The classes were irregular in size, and were not specially characteristic for uniformity of type and condition as to fitting or quality, but there were some very strong classes and the winners in the first places—usually in the first three or four places—were strictly high class, or outstanding. The first class called brought out a half dozen bulls, three years old or over. While not the largest or strongest class it furnished the grand champion in the Bellows bull, Diamond Goods, a smooth, well proportioned bull of the popular type, and show yard style and quality. Mr. Harding of Wisconsin, who was a strong winner at this show, furnished the strongest competition for championship honors. The class of two-year-old bulls was considered the strongest class of the Short-horn show. It brought out a dozen two-year-olds that were considerably better than the class of two-year-olds usually seen at the state fair. Harding won first, but between the first three judges might easily differ. In the senior yearling bull class Harding again won first, this time on a son of his former champion, Leader of Fashion. In the junior yearling class all the prizes except third went to the Iowa exhibitors, McMillan & Sons winning first on a son of the champion Ringmaster. The senior bull calf class, numbering twenty-four, was a big class of good ones, and gave the judge some trouble. There were a number in the class about evenly balanced as to good points and it was a hard class to judge. Harding got first, with Powell & Son close enough second that they had friends for first. There were three Powell entries in this class, all sired by their former champion, King Cumberland 2d, and all good ones. The female classes were of similar character as the bull classes, and the awards are given without further comment. Mr. A. J. Ryden, of Illinois, who is an experienced Short-horn breeder, and is recognized as a reliable judge, placed the awards.

THE ANGUS.

The Angus show at Des Moines this year was up to last year's standard in quality, but was the lightest in number of exhibitors for many years. Iowa has been noted for its good Angus herds, and the strong showing the Iowa Angus breeders have been making at leading stock shows. Heretofore the Iowa exhibitors have made their initial showing for the year at the Iowa State Fair, which made the Iowa Angus exhibit doubly interesting, for the reason that it was the first contest of the season, and was always strong. This year one of the strongest Iowa show herds was showing in Canada, instead of here, and some former exhibitors are not showing at all this year. The exhibitors, while small in number, made a strong showing, and the breed was well represented by some of its best specimens. The grand champions were the same as last year, Messrs. Binnie & Son winning on their many times champion, Kloman, and Messrs. Miller & Son winning again on Barbara Woodson, who won championship all around the circuit last year. W. A. McHenry was the strong winner in herds and other group classes, and was also strong in the fight for championships. Messrs. Chas. Escher & Son, Botna, Ia., were exhibitors of young bulls, which were very strong in their classes, and won several firsts. Anderson & Son of Newell, Iowa, were out with a strong herd, and won some good prizes. Mr. Rosenfeld of Kelly, Iowa, was the other exhibitor, and won prizes in all the classes in which he had entries. The awards were made by Mr. C. J. Martin of Churdan, Iowa.

THE WHITE FACES.

The Hereford show was strong, as usual, but did not excel the remarkably strong showing made by this breed at the Iowa State Fair a year ago. There were thirteen exhibitors and among them were the strongest winners of a year ago. Much of the competition was the same as last year and the contest for first honors was much the same as then.



GRAND CHAMPION HEREFORD COW
Iowa State Fair, 1912

For this reason, and because this is the first time these leading exhibitors came together this year, the competition was especially keen, and the Des Moines Hereford show doubly interesting. Mr. Cudahy of Missouri again won grand championship on his last year's champion, Scottish Lassie, and he also had the grand championship bull. The Iowa exhibitors made a good showing, considering their strong competition. Cyrus Tow of Norway, Iowa, won both Iowa grand championships. The awards were made by Mr. Frank Van Natta of Indiana, for many years a successful exhibitor of Herefords.

THE GALLOWAYS.

Four Galloway exhibitors, one from Iowa, one from Kansas, and two from Nebraska, contested for the prizes awarded this breed. Mr. Chas. Escher, Jr., of Botna, Iowa, did the judging, and while the classes were not large, competition was often close, and it was one of the best Galloway shows that has been made at the Iowa State Fair. The breed, as represented by the splendid specimens on exhibition, has made marked improvement the past decade.

THE POLLED DURHAMS.

There was a good exhibit of Polled Durhams, but the exhibit was largely from outside the state. Iowa has a number of good Polled Durham herds, some of which have furnished some of the strongest competition at former state fairs, and other leading stock shows, but this year only one Iowa herd was represented. The judging was done by Mr. E. R. Silliman of Colo, Iowa, well known as a Short-horn breeder.

THE FAT STOCK.

There were only a few exhibitors of fat cattle, and consequently very little competition. The stock shown was generally of an exceptional good quality.

THE DAIRY CATTLE.

The four exclusive dairy breeds—Holsteins, Jerseys, Guernseys and Ayrshires—were all represented at Des Moines last week, as were also the Brown Swiss and Red Polls—two breeds that have both dairy and beef qualities. There was a good, strong showing of Jerseys and Holsteins, with considerable competition in all the classes. In the Guernsey show the competition was somewhat limited, as one of the strongest exhibitors who had made entries was unable to show at Des Moines, and in the Ayrshire show there was only one exhibitor, but in all these breeds there were very worthy animals on exhibition. The showing of Brown Swiss cattle was one of the best that has ever been seen at Des Moines. The Red Polled show is specially mentioned elsewhere. The list of awards which follows is of interest as showing who were the successful contestants and their winnings.

THE RED POLLS.

The showing of Red Polled cattle was perhaps the best that has ever been seen at the Iowa State Fair. They outnumbered the Angus, and the exhibit brought out some very fine specimens of the breed. Several strong Nebraska herds divided the honors with the Iowa exhibitors, as shown in the list of awards. Prof. H. R. Smith of the Minnesota Agricultural College did the judging.

THE HORSE SHOW.

The horse show began promptly at nine o'clock Monday morning, at which time all of the aged stallions of four draft breeds were presented before the different judges, and they made a grand opening display. Compared with former shows, the show of 1912 excelled in quality and value, while in numbers some of the breeds were short this year. This was true especially of the Shire and Percheron classes. An encouraging feature of the show was the number of small breeders who were in evidence, which goes to prove that interest in the draft horse business is not declining in Iowa. A very attractive feature was the futurity colt show, of yearling colts from the four different draft breeds in the ring at once, which proved one of the greatest attractions of the horse show.

THE PERCHERONS.

In numbers this class did not quite measure up to the show of 1911, but in select quality and value, it will compare very favorably with any former show. This is especially true in the colt classes, in which were found some of the best specimens of the breed that have been seen in Iowa for some time. The futurity colt show no doubt increased the numbers of youngsters and added interest to the show as well. A feature of the show was the number of young breeders in evidence, for without them it would have been a very light show, as the number of importers were much less than in former years. It was in fact an Iowa show, with three exceptions. The prizes were pretty well distributed among the different exhibitors. H. G. McMillan & Son were quite successful, they winning first place in the four-year-old stallion class on their very clean quality, stylish gray Incruste. He was also later made champion stallion of the breed. Pioneer Stud Farm had a strong competitor in Interprete, a very toppy, high-class, gray stallion, full of Percheron character. McMillan & Sons were also awarded champion mare on Rosine. C. B. Dannen & Son were strong competitors for the championship, with two very choice gray mares, Jongleuse, a very select quality three-year-old gray, and Gray Prefection, a filly that attracted much attention, and one almost perfect in Percheron type and character. Barring accident, she will doubtless develop into a show mare for future shows that will be hard to defeat. In the yearling classes, W. S. Corsa won both first and second prize on Percheron fillies and stallions, all being sons and daughters of his champion stallion Carnot.

THE CLYDESDALES.

This popular Scotch breed made the largest show that has been seen at the Iowa State Fair for a number of years, and it is probably safe to assert that a better show has never been seen than was made this year. It was noted for its close adherence to breed type and character, and there were excellent specimens found in all of the different classes. The show was made by a number of the best importers and breeders in America, and in character was one that reflected much credit on the exhibitors and the breed. It doubtless will be a strong factor in winning many new friends and holding old ones. A. Galbraith & Sons, De Kalb, Ill., were awarded champion stallion on their yearling stallion Charnock; while it is an unusual thing for championship to fall to a yearling colt, he was generally conceded entitled to this honorable position on account of his clean, neat quality and stylish finish and breed character. In addition to this, his peculiar markings of white face and white legs make him especially attractive. He bids fair to continue to grow and develop into a stallion that will have to be reckoned with in future shows. McLay Bros., Janesville, Wis., won first prize and championship on Graceful Lady, a mare of sweet Clyde character, smooth, drafty form, with the best of feet and legs. Her right to this position was not questioned.

THE BELGIANS.

From the interest shown for this heavy draft breed, it seems that they are gaining in popular favor, especially with the breeders and farmers of Iowa. A very noticeable fact in this year's show was the improvement in the quality and character through all the different classes. The modern Belgian, which is one with cleaner legs and better feet, was largely in evidence, and Mr. Alex. Galbraith proved a most competent judge, his selections being given general approval. While this breed was not great in numbers, in value, type and form it will compare very favorably with any former show that has been made at the Iowa State Fair. An encouraging feature in the show of this breed was the number of young things in evidence. It goes to show that the breeders and farmers of Iowa have been successful in the production of good Belgians. This breed seems to be well adapted for heavy work in the corn belt.

ENGLISH SHIRES.

In numbers, this great breed of English draft horses did not measure up to former years, it being one of the lightest shows that has been seen at an Iowa State Fair for some time, but in value and high-class breed character it was not wanting. The very best specimens of the breed that could be found in England or America were on exhibition. Trumans' Pioneer Stud Farm, Bushnell, Ill., made a grand display of imported stallions, and an inspection of the prize list will show that they made almost a clean sweep in the stallion classes.

THE SHEEP SHOW.

The Lincoln and also the Dorset sheep show was made by Alex. W. Arnold, of Galesville, Wis. The only exhibitor of Cotswolds was F. W. Harding, Waukesha, Wis., and all awards were won by his entries. Cheviots were shown by R. & W. Postle, Camp Chase, Ohio. King Bros., Laramie, Wyo., won most of the prizes for Rambouillet sheep, with F. W. Cook, of West Mansfield, Ohio, and Scott & Co., Mt. Sterling, Ohio, winning some ribbons. The Hampshire show was made by Walnut Hill Farm, Donerail, Ky., who won every first prize, with a few entries by Arnold and McKerrow.

THE HOG SHOW.

The annual swine exhibit at Des Moines has for many years been the largest in the world, and the mammoth swine pavilion covering the exhibit has already been described as the largest building of the kind. This year's state fair exhibit of swine did not reach the high tide of recent years numerically, but was large enough that it will undoubtedly hold the record for the year. One hundred and forty-seven swine breeders made entries as exhibitors, sixty of whom were Duroc Jersey breeders, thirty-six Poland China, twenty-six Chester White, fifteen Hampshire, seven Berkshire, two Yorkshire, and one Tamworth breeder. Not all of these exhibitors brought their hogs, but Superintendent Johnston estimated that there were from 2,200 to 2,400 head of swine in the pens. The Duroc Jersey led with 720 head, with the Poland Chinas, Chester Whites, Hampshires, Berkshires, Yorkshires and Tamworths following in the order named. There was only one exhibitor each of Yorkshires and Tamworths, and the Berkshire exhibit was not large. The other breeds were well represented in numbers. The Chester White show has grown from a comparatively small exhibit to one of the biggest hog shows at the fair, and in numbers they are now crowding the Polands. The Chester White breeders have also made marked improvement in their breed, especially in quality, and we might also mention a marked improvement in ham and head and ear. The Hampshires are a new breed, and have already taken a prominent place in the hog show, both in numbers and in interest. The Duroc Jersey show this year was about the average seen at Des Moines, both in numbers and quality. The winners were high class but few of them were especially outstanding. The grand champions may be considered in the latter class. As is sometimes the case, the grand champion boar was one that had not been figured on much before the fair, and the hog that some of the "wise ones" had counted on being the winner had to take second place. The grand champion Duroc boar excelled in smoothness and quality, and he also has good size. The Poland China exhibit was made up of the different types for which the Poland China show has been noted for several years. There were more of the "big type" Polands on exhibition this year than ever, and in the boar classes especially the big types made a strong showing—the strongest they have ever made. In the sow classes most of the big types lacked either quality or fitting to win. The show was hard to judge with the different types, and Harvey Johnston, who had been selected to tie the ribbons, gave up and went home sick after the first day's work. Mr. J. M. Stewart finished the judging. The difficulty in satisfying the adherents of the large and small types made the work of the judge very unpleasant, and this was aggravated by the non-enforcement of the rules, which forbid abuse of the judges.

Twentieth Century Farmer, Omaha, Neb.

One of the foremost, if not the leading, exhibition enterprise of this character in the United States, the Iowa State Fair and Agricultural Exposition, was in annual session last week. The planning and purpose of this exposition management was the exploitation of the natural and acquired resources of the state to the highest possible degree of exhibition excellence that the agricultural interests and industries of this commonwealth are capable of producing. This annual convention of sight-seeing gathered tens of thousands of stockholders in this great propaganda of agricultural education, agricultural enterprise and agricultural improvement. All kinds and classes of business were represented at this gathering and all kinds and classes of citizens that go toward making up the population of a great and prosperous community of people, such as the state of Iowa represents and stands for in its varied and various industrial resources and business enterprises.

THE IOWA STATE FAIR EXHIBIT.

The backing that the Iowa State Board of Agriculture has, in all its varied duties and responsibilities as an official body, is abundantly set forth in the strong endorsement that it receives in the attendance from all parts of the state. The people of Iowa have acquired the state fair habit. Many come to the state fair as an annual outing; they come to see the fair in all its aspects of exhibition and entertainment. They have learned to regard the state fair as an occasion that they cannot afford to miss from an educational and social standpoint. Each year they broaden out and become more interested in the features that they are not specializing on in their own homes and on their own farms. It is beginning to dawn on many state fair visitors and patrons that this institution is a system of instruction for the broadening and leveling out of intellectual man to a better understanding, a more comprehensive idea of what the farm and home should be; the introduction of new methods, to be profitably applied in farm management, and the great object lesson school it has developed into, where the system of comparison is taught on every hand.

The Iowa State Fair each year demonstrates its ability and demand for greater things, for more space to be occupied in the accommodation of the various departments. Its large fair grounds, that only a few years ago were commented upon as being too large; the departments scattered over too large an area of land, requiring too much worry and travel to get from one to the other, is now being commented upon favorably by fair people who each season visit a number of state fairs as being wisely and well planned. Its present condition shows that it has developed in department requirements and their accessories, until the fair grounds have filled up, grown like a great city into a solid habitation of business and industry.

PLACES OF REST FOR THE WEARY.

The parking of a state fair grounds, wherever a few rods of space can be devoted to this purpose, is possibly the very best business investment that a state fair board can practice. A little shade and a few rest seats meets the approval of 99 per cent of all the people on the grounds. Iowa has not overlooked this feature of demand from the weary mother with her babe to the other sight-seers who are almost ready to drop down any place for rest, a moment's relief. Thousands of settees are scattered over the parked divisions of the grounds and invite the weary and foot-tired pedestrians to rest.

The machinery department at this fair is one of the most interesting features of exhibition because of its general character, covering practically every line of machinery, tool, implement and device used on the farm, about the home or in general service over the country. The big machinery hall, where acres of machinery are housed and arranged for exhibition, is an eye-opener to the immensity of display in this department. But when one attempts to make a tour of the forty acres of machinery outside of this big hall he feels that the Iowa State Fair is too big a proposition for a one-week canvass and feels like petitioning the fair board to give the exhibition, the sight-seer and the interested public an extension of time of at least four more days. The machinery department is estimated by the superintendent of that division to be one-third larger than at any former fair and of a character much finer in display.

BUILDING OF GREAT VARIETY.

The big agricultural building was the feature of general attraction from the fact of its general character of exhibit. This building provides for the fruit and floral exhibits, dairy, bees and honey, the state agricultural exhibit by counties or farms, and also gives space to land companies and outside advertising firms and farm land exhibits. It has many features of display of interest to the farmer, horticulturist and dairyman. The dairy department has its special attractions in this building. The farm products display was larger and better than at any former fair. The fruit was not so good in quality, but in quantity was about the same as other years. This building provides the visitor with the greatest variety of entertainment of any place on the grounds; it also takes care of many concessions that are best served, where many people congregate to rest and take their time to look at the attractions and entertainment features.

The poultry department was one of great interest to many visitors and is steadily climbing higher in exhibition quality each year. There were 1,650 fowls in the coops, 100 more than last year, and in quality it was the opinion of expert judges that this year's display has never been equaled. The prevailing tendency is toward the breeding of the American classes, as these are favorites among the farmer poultry raisers. Another prominent feature is that the farmer breeder is the foremost exhibitor. This fair has discriminated against the huckster exhibitor, the professional exhibitor who fits himself out with a line of exhibition fowls and makes the rounds of the fair solely for the premium money that he can get out of it. No one can now display more than fifty fowls; this disarms the huckster exhibitor, making the money incentive too small to justify the following of the fair circuits.

SALE OF BABY CHICKS QUITE POPULAR.

The exhibition of large incubators with a capacity of from 1,200 to 10,000 eggs at one hatching, was a matter of interest to many poultrymen and women. The sale of baby chicks, in place of eggs for hatching, is becoming quite popular among the fanciers. The chick is shipped in a specially constructed pasteboard crate and arrives at its destination in good condition ready to start off growing. The poultry department of the Ames Agricultural College made several feature exhibits that were very instructive; among them were the killing and dressing of fowls, the trap nest, methods of feeding for eggs and for meat, sanitation of poultry and poultry quarters, plans for poultry houses, etc.

The sheep department was about up to average years. The fine wool classes were represented by the Rambouillet, American merino and the three types of Delaine merino. All of these showed together as one class, except the Rambouillet, which stood by itself. The show as a whole was not a strong one, though several prominent flocks were present; among those were two from Ohio. The strong type characteristics of each distinct breed or family of merinos was not given any consideration by the judge, which put the exhibitors at a loss to know what the founders and builders of these various breeds had accomplished after their work of generations of men and sheep, if it was all to be lightly cast aside by the actions and decisions of one person, who had no experience as a breeder and handler of these sheep. The mutton division was well represented by prominent flocks, the competition close and careful, practical judging observed. The inquiry for breeding rams was very encouraging to the exhibitors and no doubt many sales will follow.

The cattle department, from the standpoint of quality in most breeds, has never been excelled. The dairy breeds were never so fully or so well represented as this year. The Holstein, Guernsey, Jersey, Ayrshire, Brown Swiss and Red Poll were all prominent in the show ring, the quality being exceptionally good.

The beef breeds, the center of interest from the packers' and meat consumers' standpoint, were regarded with a great deal of respect. The big animal was not so critically scrutinized in search of minor and unimportant defects of where there was too much or not enough fat, but estimated more from the practical common sense standpoint of value as a beef producer. After all, it is quality and quantity combined that puts dollars into the pocket of beef growers.

The Short-horn and Angus breeds were complained of by some cattle judges as not being quite up to the Iowa State fair standard. This was due mainly to some breeders not exhibiting who have formerly helped fill up the ranks. The Hereford show was strong and merited the compliment it received. The Galloway class is always good in quality, but not sufficiently numerous to attract the attention it deserves. The cattle department as a whole was one of the shows hard to beat.

MORE PORK IN THE SAME HIDE.

The swine division at the Iowa State fair has always been a leading attraction. It is a throng place, made so by its numerous exhibitors and interested visitors. This department is holding its own. There is not much variation in numbers exhibited or interest in the exhibition. This year, however, there is quite a tendency toward the larger type of hog, especially in some of the breeds where large and small had become a distinguishing feature among breeders. Here again is the influence of dollars and cents exerting its argument for more pork in the same hide. The more pork that can be produced in these times of high-priced meat the better it suits the farmer. It is selling hogs at so much per pound, not measuring bone, that interests the common hog raising farmer. The question of keeping free from hog cholera is still commanding the attention of hog raisers.

The horse interests are still moving forward, notwithstanding the automobile and the truck are seemingly infringing on the work of the horse. The big new brick barn on the Iowa State fair grounds, filled to overflowing with horses of all kinds, from the diminutive little Shetland to the Percheron, would indicate that capital and business management still see a bright outlook for the horse, the team on the farm. The new barn is only two-fifths its contemplated size; it now accommodates 475 horses, and when completed will house approximately 1,000 head. The show of draft horses has been referred to as very fine, the greatest show of American-bred horses ever made at this fair. Never has there been so many Iowa breeders exhibiting. Draft horse importers who generally make a strong show at this fair were not able to get their fresh importations home, consequently were not present.

PONIES CATCH "PA AND MA."

The pony exhibit was very fine; over 150 ponies were on exhibition, occupying four long rows of stalls in the big barn. The interest in this show cannot be described, so intense was the excitement and anxiety of sightseers about this division. It was not only a boy and girl show in interest, but a "Pa and Ma" show as well.

The Iowa State college building is one of the greatest points of interest on the fair grounds. This is a large exhibition building devoted entirely to the use of the agricultural college in its exhibition of what the college is doing at Ames as nearly as can be from a presentation of exhibits and demonstration lectures explanatory of the various departments and their work. It is bringing the college to the people, and thousands get an idea of agricultural college work that otherwise never would become interested. Each department is in charge of instructors. It is an excellent piece of extension work.

Approximately 100 boys, each representing his home county, were made quite conspicuous on the fair grounds by their uniforms and their organized appearance on all parts of the fair grounds each day of the fair. These boys were the proteges of the State Board of Agriculture, having been the winners of a statewide essay contest conducted by the county school superintendents of the several counties. The boy of any public school receiving the first prize for the best essay on Iowa was the elected delegate to represent his county at the state fair, all his expenses and entertainment to be paid by the state board. The boys were camped and officered by their own members under the supervision of the state superintendent. They were also given light guard duty on the fair grounds and instructed in the affairs of running a state fair so far as becoming familiar with the various departments was concerned. A fine piece of state fair work and very popular.

The old soldier was not neglected. Thousands of these old veterans come each year to this fair, representing almost every state in the union. This feature has grown in popularity until visitors from the Atlantic to the Pacific and from the gulf to Canada, make it a point to come to the grand encampment held at the Iowa State fair. They are in the main a jolly, happy, social lot of gray-haired men. There is a pathetic side to this picture that is scarcely appreciated by the present generation of boys and girls. Only a few more years and this organization and this feature of the Iowa State fair will have passed beyond.

Farmer & Breeder, Sioux City, Ia.

THE IOWA STATE FAIR.

The fifty-eighth annual Iowa State Fair closed on Friday, August 30. It was a success in every sense of the word. The weather was ideal for a big attendance. True it was hot at times, but the heat added millions of bushels to Iowa's growing corn so nobody complained. Thursday morning the sky was cloudy, but later in the day the clouds were routed before any rain fell. With the weather right, the best crop of small grain produced in many years safe in granary or stack, and the corn making big strides toward one of the biggest crops ever produced in Iowa, it is not surprising that the attendance was over 2,000 larger than last year. Had the railroads granted special fair rates the attendance would undoubtedly have come close to 300,000; as it was it was estimated at 273,000 as compared with 270,700 last year. The net profit was unofficially placed at approximately $30,000. Total receipts were estimated at $180,000. In other words, the fair was a success financially.

Financial success is desirable, but it is more important that it should be a success educationally as well as inspirationally. In these respects the big exposition did not lag. Thousands of men and women went home with new ideas in farming and home-making. Men who studied the live stock exhibits, the agricultural and horticultural products were deeply impressed with the value of breeding and feeding in the development of Iowa's great live stock industry. The same was true of the women folks who studied the many things pertaining to the home. New enthusiasm was kindled in the minds of thousands of young as well as older men in the latent possibilities of Iowa farms, many of which are still awaiting modern methods of culture and management. It is indeed a privilege to attend a great state fair in these days of high-priced land when everybody is looking for information to help make it pay.

As usual, the live stock show was excellent. The Iowa fair has for years been looked upon as a leader among state fairs in the number and quality of draft horses, beef cattle, and swine on exhibition and no doubt its past record will be upheld this year when the show season has ended. However, a number of the leading live stock exhibitors did not appear in the ring this year, and a percentage of the stock was not as highly conditioned as it has been in former years. The latter condition was undoubtedly due to the fact that feed has been scarce and unusually high in price. Though some of the leading showmen, who usually make their initial appearance at Des Moines each season, were absent, the show as a whole was no less attractive and educational than those of past years. In some respects it was better. It was more of a farmer's fair and less of the professional showman's fair. The places of some of the leading breeders, who were absent, were taken by new men and new herds so far as the Iowa show rings were concernd. This fact points to still bigger stock shows at Des Moines in the future.

The draft horse show, taking everything into consideration, was one of the best that has ever been held at Des Moines. Some of the classes were not so well filled and were perhaps not quite so good from a quality point of view as they have been in former years, yet others were larger and better. Many notable victories were won in the horse classes by home-bred stock. This was particularly true of the Percheron and Clydesdale breeds. H. G. McMillan & Sons of Rock Rapids, Iowa, were the leading winners of Percheron honors; in fact, this firm won more championships than has ever been won by any other firm at one fair. They emerged with champion stallion, champion mare, champion stallion owned in Iowa, champion mare owned in Iowa, Percheron Society of America champion stallion and mare bred and owned in Iowa, and a number of reserve championships—making nine champion and reserve championships out of a possible twelve.

The Clydesdale show was perhaps the best that has ever been made at Des Moines. Home-bred animals were more conspicuous than usual and they fully held their own with the imported ones. This was especially noticeable in the mare and younger stallion classes. The Shires were present in their usual form, apparently glorying in their massive weight and great power combined with good movement and style. The principal show was made by Truman's Pioneer Stud Farm. The Belgian classes were a bit smaller than usual, but the entries showed plenty of quality. The judging of this breed, which is evidently growing in popularity, was watched with considerable interest by the spectators in the great judging pavilion, which, by the way, seemed almost constantly filled to its capacity this year.

The futurity colt show created much interest everywhere; it was a pronounced success in every respect. The Chicago Live Stock World, which established this feature last year and has been promoting it ever since, deserves great credit for the work it has done. The entries for the event this year consisted of thirty-three Percheron, nineteen Shire, eighteen Belgian and fourteen Clydesdale colts—including both stallions and fillies. As a result of these futurity shows breeders are taking more interest in developing their colts and thus much good is being accomplished, for only by keeping the colts coming steadily along from birth to maturity can big draft horses of the desired weight be produced.

Some of the beef breeds of cattle were not so well represented as usual; neither were there as many exhibitors. There were perhaps as many good ones among the ribbon winners of the Short-horns, but there were fewer from which to select them. Quite a number lacked fitting to compare favorably with the company in which they were placed. However, the showing made was on the whole very creditable. The Herefords were out in full force—all in their Sunday clothes. Practically all classes made an unusually good showing. They undoubtedly made a deep impression upon the spectators in the judging amphitheater and especially upon prospective buyers of feeding cattle. The Angus breeders made their usual good impression upon the crowds with their smooth Doddies that waste no feed on superfluous bone development. Their cattle were in fine condition for the show ring. Among the Polled Durhams there were some unusually fine specimens of the breed, showing that progress is being made from year to year in the development of these hornless Shorthorns, but the number on exhibition was much smaller than last year. The Galloway show was much the same as it has been in former years, though a little smaller.

The show of dairy cattle was considerably larger than a year ago. Including the Red Polls with the dairy breeds, there were 455 head as compared with 360 last year. Holsteins were much more numerous than they have ever been before and the quality was fully up to standard. The Jerseys made a very fine showing. Guernseys, Ayrshires, and Brown

Swiss were represented by a few herds. The Red Polls, which are classed as a dual-purpose breed, presented a very fine appearance. The entries made amounted to 133 as compared with eighty-seven in 1911. Some of the classes were very large. The Red Poll show was stronger than any made at Des Moines in former years.

The swine pavilion was crowded to its capacity and must have held in the neighborhood of 2,000 hogs. The Duroc-Jerseys seemed to be the most numerous, though the Poland-Chinas must have been close seconds. Chester-Whites, Hampshires, Berkshires, and Large Yorkshires were all well represented. It is scarcely necessary to say that the hog show was fully up to standard. Breeders found a strong demand for good breeding stock at satisfactory prices. There seemed to be a pronounced disposition among buyers to look for quality rather than for low prices. High-priced feed and high-priced pork are powerful stimulants to growers to improve their breeding herds.

The individual farm displays of which there were ten, were interesting because they were nicely arranged. They were made by owners of 80-acre farms and therefore called special attention to holdings of that size. To those who understand how such exhibits are gotten up, however, they do not make a very strong appeal. They become merely a few bundles of grain and grasses nicely tied together and hung up on the walls in an artistic manner. The effect of this is heightened by a nice assortment of vegetables spread out on shelves or tables underneath the decorated wall space. In the background is the name of the farm nicely worked out in moss or some other suitable materials. Such displays are pleasing to the eye, but they convey no information of value to the practical farmer. Most of the specimens one sees in such displays are grown especially for the fair and in reality do not show how the 80-acre farm, which they are supposed to represent, is being managed nor whether the methods actually followed are profitable or not. Besides being nice to look at, why should not these individual farm exhibits show something of the actual results obtained on these farms? Why not pick out a dozen farms or so in various parts of the state that are managed by up-to-date, progressive men and have careful records kept on them for a year or a series of years, and then show definitely what has been accomplished. The rotation followed, if any, could be shown. Seed bed preparation could be illustrated and yields obtained could be recorded. The whole scheme of management could readily be illustrated by means of contour soil maps showing the farms themselves.

The fruit exhibits in Horticultural Hall were pleasing and educational in that they called special attention to the varieties best suited to Iowa conditions. The display of Jonathan, Winesap, Delicious, and Northwestern Greening apples was very fine. Those who were specially interested in good farm orchards or in the growing of fruit on a commercial scale learned from one of the leading fruit exhibitors that he attributes his success in fruit growing during the last few years to the use of smudges in his orchards. Two years ago when the frost destroyed the apple crop over the greater part of Iowa this man saved a 12-acre orchard by lighting smudge pots between every square of four trees. This made a good deal of work and cost considerable money, but it paid handsomely because apples brought a fancy price that fall. The few who can manage to raise big crops when others raise little or nothing are the men who succeed best.

The agricultural display was not up to standard. The corn show was very poor. The latter part of August is, of course, too early for new corn in Iowa, but if it is desirable to show corn at all, the display ought at least to do credit to the state and not be composed of a lot of miscellaneous samples that would be ruled out at a county fair. The corn on display certainly was not representative of Iowa's crop and should never have been given space on the half empty shelves on which it was found. The products of the grain fields have not been properly displayed at Des Moines for many years. We are unable to divine a reason for this lack of interest in this important field. Surely Iowa farmers produce grains that are worthy of a prominent place in Agricultural Hall.

Some of the exhibits of the Iowa State College were most instructive. Among these was a soil map of the state showing that co-operative experiments in the growing of corn, small grains, and alfalfa are being conducted in all the counties except five. Furthermore, that good stands of alfalfa have been obtained in at least 90 counties in the state, though unsuccessful attempts have also been made in some of the counties. From a general view of the map, however, one got the impression that this valuable legume can be grown all over the state if the ground is properly prepared therefor. There may be restricted sections where the soil is underlaid with hardpan or where good drainage is lacking that are not suitable for alfalfa, but the experiments mentioned corroborate the opinion expressed by this journal for several years that there is comparatively little land in Iowa on which this valuable forage plant can not be grown to advantage. It is time for farmers in the corn belt to pay more attention to this forage plant which forms such a valuable adjunct to corn silage for beef as well as milk production.

Another exhibit in the Iowa State College building was a concrete illustration of the results that have recently been obtained at that institution in pig-feeding experiment. Stuffed pigs were placed in four pens, the first representing a dry lot, the second a rape pasture, the third a clover pasture and the fourth an alfalfa pasture. Printed cards over each pen showed that pork had been produced at a cost of 5.21 cents per pound in the dry lot, at 3.8 cents on rape pasture, at 3.7 cents on clover pasture, and at 3.4 cents on alfalfa pasture. The pastures in each case were supplemented with grain, but a proper valuation was assigned to the pasture fields in calculating results. One acre of rape produced 677 pounds of pork; one of clover, 728 pounds; and one of alfalfa, 744 pounds. This concrete representation of facts was very impressive, and undoubtedly made an indelible impression upon the minds of many farmers whose attention was gained through the novelty of the plan of presentation. The lesson taught was clear cut: Use more pasture crops for pork production. Grow the pigs on cheap, healthful feed, and then finish them on corn properly balanced with high-protein products.

Good Stands of Alfalfa Have Been Obtained in at Least Ninety of the Counties of Iowa.—Courtesy Iowa Agricultural College,

AWARDS

IN

LIVE STOCK DEPARTMENTS

IOWA STATE FAIR AND EXPOSITION
1912

HORSE DEPARTMENT.

SUPERINTENDENT............CHAS. F. CURTISS, Ames, Iowa.

PERCHERONS.

EXHIBITORS.

Anita Horse Co., Anita, Iowa; Harold Anderson, Cambridge, Ill.; Geo. Baker, Newton, Iowa; W. H. S. Barnett, Dexter, Iowa; Brown & Walker, Clarinda, Iowa; John Cameron, Audubon, Iowa; W. S. Corsa, White Hall, Ill.; Crawford & Griffin, Newton, Iowa; Wm. Crownover, Hudson, Iowa; C. B. Dannen & Sons, Melbourne, Iowa; Dunhams, Wayne, Ill.; Geo. Eggert, Newton, Iowa; J. C. Ewing, Farmington, Ill.; Finch Bros., Joilet and Verona, Ill.; E. N. Gates, Newton, Iowa; Hillcrest Farm, Ottumwa, Iowa; E. M. Hoagland, Promise City, Ill.; Chas. Holland, Springfield, Mo.; E. L. Humbert, Corning, Iowa; Iowa Agricultural College, Ames, Iowa; Chas. Irvine, Ankeny, Iowa; C. E. Jones, Rippey, Iowa; J. T. Judge, Carroll, Iowa; Geo. M. McCray, Fithian, Ill.; H. G. McMillan & Sons, Rock Rapids, Iowa; F. M. Myers, Eldora, Iowa; Martin Nelson, Cambridge, Iowa; J. S. Oakman, Blandinsville, Ill.; J. L. Risley, Ames, Iowa; W. W. Seeley, Stuart, Iowa; E. R. Shaw, Oneida, Ill.; R. N. Thompson, Cowden, Ill.; Truman's Pioneer Stud Farm, Bushnell, Ill.; I. W. Wambold, Stuart, Iowa; F. W. Weinrich, Geneseo, Ill.

AWARDS.

JUDGE...........................WM. BELL, Wooster, Ohio.

Stallion Four Years or Over—First, Incruste, 61595, H. G. McMillan & Sons; second, Interprete, 80503, Truman's Pioneer Stud Farm; third, French Premier, 53995, W. W. Seeley; fourth, Isocrate, 70608, Crawford & Griffin; fifth, Irrite, 70272, Martin Nelson; sixth, Istroth, 64979, Geo. Baker.

Stallion Over Three, Under Two—First, Joujou, 84455, Dunhams; second, Johannisberg, (84107), Dunhams; third, Janze, 88423, Dunhams; fourth, Janssen, 89205, Dunhams; fifth, Jaley, 81593-84784, Wm. Crownover; sixth, Fremont, 69967, F. W. Weinrich.

Stallion Over Three, Under Two—First, Kourbet, 92031, Dunhams; second, Kolonel, (93076), Dunhams; third, Kaifoung, (92653), Dunhams; fourth, Lunar, 79279, H. G. McMillan & Sons; fifth, Kanova, 90926, Dunhams.

Stallion Over One, Under Two—First, Carlant, 86615, W. S. Corsa; second, Carbon, 86617, W. S. Corsa; third, Matador, 86310, H. G. McMillan & Sons; fourth, Jocko, 86281, J. T. Judge.

Stallion Foal—First, Buster, 86708, Martin Nelson; second, Victor, J. L. Risley; third, Belmonte, Brown and Walker; fourth, Caption, 86709, Martin Nelson.

Stallion Three Years or Over, Bred by Exhibitor—First, French Premier, 53995, W. W. Seeley.

Stallion Under Three, Bred by Exhibitor—First, Lunar, 79279, H. G. McMillan & Sons; third, Carlant, 86615, W. S. Corsa; third, Carbon, 86617, W. S. Corsa; fourth, Comet, 77989, Martin Nelson.

Mare Four Years or Over—First, Rosine, 65953, H. G. McMillan & Sons; second, America, 45755, H. G. McMillan & Sons; third, Gelive, 70392, Finch Bros.; fourth, Histoire, 67621, Hillcrest Farm; fifth, Sula, 55397, W. H. S. Barnett.

Filly Over Three, Under Four—First, Jongleusse, 82340, C. B. Dannen & Sons; second, Lady Perfection, 68287, C. B. Dannen & Sons; third, Jane, 70889, H. G. McMillan & Sons; fourth, Gracia, 70349, H. G. McMillan & Sons; fifth, Fortune, 67646, F. W. Weinrich.

Filly Over Two, Under Three—First, Grey Perfection, 70286, C. B. Dannen & Sons; second Roselle, 78747, H. G. McMillan & Sons; third, Mabel, 73569, Finch Bros.; fourth, Diamond, 76587, W. H. S. Barnett; fifth, Hesper, 82853, Hillcrest Farm.

Filly Over One, Under Two—First, Lottano, 84439, W. S. Corsa; second, Folito, 86613, W. S. Corsa; third, Empreto, 86614, W. S. Corsa; fourth, Geneseo Gem, 81941, F. W. Weinrich.

Mare Foal—First, Carnot's Maid, 86282, J. T. Judge; second, W. H. S. Barnett; third, Miss Helix, Brown and Walker.

Mare Three Years or Over, Bred by Exhibitor—First, Rosine 65953, H. G. McMillan & Sons; second, Lady Perfection, C. B. Dannen & Sons; third, H. G. McMillan & Sons; fourth, Gracia, 70349, H. G. McMillan & Sons; fifth, Queen B, 61765, W. H. S. Barnett.

Mare Under Three, Bred by Exhibitor—First, Lottano, 84439, W. S. Corsa; second, Grey Perfection, C. B. Dannen & Sons; third, Roselle, 78747, H. G. McMillan & Sons; fourth, Folito, 86613, W. S. Corsa; fifth, Empreto, 86614, W. S. Corsa.

Champion Stallion—First, Incruste, 61595, H. G. McMillan & Sons; second, Kourbet, (92031), Dunhams.

Champion Mare—First, Rosine, 65953, H. G. McMillan & Sons; second, America, 45755, H. G. McMillan & Sons.

Champion Stallion Owned in Iowa—First, Incruste, 61595, H. G. Mcmillan & Sons; second, Lunar, 79279, H. G. McMillan & Sons.

Champion Mare Owned in Iowa—First, Rosine, 65953, H. G. McMillan & Sons; second, America, 45755, H. G. McMillan & Sons.

Get of Stallion—First, W. S. Corsa; second, and fourth, H. G. McMillan & Sons; third, C. B. Dannen; fifth, W. W. Seeley.

Produce of Mare—First, C. B. Dannen & Sons; second, H. G. McMillan & Sons; third, M. J. Nelson; fourth, W. H. S. Barnett.

Grand Display—First, H. G. McMillan & Sons; second, C. B. Dannen & Sons.

Five Stallions Owned by Exhibitors—Dunhams.

SPECIALS OFFERED BY THE PERCHERON SOCIETY OF AMERICA.

Stallion Three Years Old and Over, Bred and Owned by Exhibitor—First, French Premier, 53995, W. W. Seeley.

Stallion Under Three, Bred and Owned by Exhibitor—First, Lunar, 79279, H. G. McMillan & Sons; second, Carlant, 86615, W. S. Corsa; third, Carbon, 86617, W. S. Corsa.

Champion Stallion Bred and Owned by Exhibitor—First, Lunar, 79279, H. G. McMillan & Sons; second, French Premier, 53995, W. W. Seeley.

Mare Three Years or Over, Bred and Owned by Exhibitor—First, Rosine, 65953, H. G. McMillan & Sons; second, Lady Perfection, 68287, C. B Dannen & Sons; third, Jane, 70889, H. G. McMillan & Sons; fourth, Gracia, 70349, H. G. McMillan & Sons.

Mare Under Three, Bred and Owned by Exhibitor—First, Lottano, 84439, W. S. Corsa; second, Grey Perfection, 70286, C. B. Dannen & Sons; third, Roselle, 78747, H. G. McMillan & Sons.

Champion Mare, Bred and Owned by Exhibitor—First, Rosine, 65953, H. G. McMillan & Sons; second, Grey Perfection, 70286, C. B. Dannen & Sons.

Get of Stallion—First, W. S. Corsa; second and fourth, H. G. McMillan & Sons; third, C. B. Dannen & Sons.

Produce of Mare—First, C. B. Dannen & Sons; second, H. G. McMillan & Sons; third, Martin Nelson; fourth, W. H. S. Barnett.

Champion Stud—First, H. G. McMillan & Sons; second, C. B. Dannen & Sons.

Five Stallions Owned by Exhibitor—First, Dunhams.

CHAMPION PERCHERON MARE
Iowa State Fair, 1912

Champion Stallion, Open Class—First, Incruste, 61595, H. G. McMillan & Sons; second, Kourbet, 92031, Dunhams.

Champion Mare, Open Class—First, Rosine, 65953, H. G. McMillan & Sons; second, America, 45755, H. G. McMillan & Sons.

PERCHERON FUTURITY SPECIALS.

Stallion Section—First, Carlant, 86615, W. S. Corsa; second, Carbon, 86617, W. S. Corsa; third, Matador, 86310, H. G. McMillan & Sons; fourth, Jocko, 86281, J. T. Judge; fifth, Comet, 77989, M. J. Nelson; sixth, J. Fawnzule, 81224, E. M. Hoagland; seventh, Jerard, 85519, H. G. McMillan & Sons; eighth, King James, 85777, F. M. Myers; ninth, Loulaba, 85384, Crawford and Griffen; tenth, Corrector, 85516, H. G. McMillan & Sons; eleventh, Bandmaster, 82794, John Cameron; twelfth, Intro, 86320, H. G. McMillan & Sons.

Filly Section—First, Lottano, 84439, W. S. Corsa; second, Folito, 86613, W. S. Corsa; third, Empreto, 86614, W. S. Corsa; fourth, Geneseo

Gene, 81941, F. W. Weinrich; fifth, Elsetta, 85534, H. G. McMillan & Sons; sixth, Hymneto, 84991, W. S. Corsa; seventh, Mona, 87092, Sheehan Bros.; eighth, Aline, 85436, J. C. Ewing; ninth, Ruth, 85306, Iowa State College; tenth, Bird, 79828, C. B. Dannen & Sons; eleventh, Carnota, 86532, E. Shaw; twelfth, Favorite, 84464, C. F. Jones.

Corsa Special—First, Aline, 85436, J. C. Ewing; second, Carnota, 86532, E. Shaw.

McMillan Special—First, Ruth, 85306, Iowa State College.

FRENCH DRAFT.

EXHIBITOR.

Justin D. McCarthy, Ames, Iowa.

AWARDS.

JUDGE............................T. W. BELL, Chicago, Ill.

Stallion Over One, under Two—First, Blucher, 22320, Justin D. McCarthy.

CLYDESDALES.

EXHIBITORS.

Peter Birgen, New Hampton, Iowa; J. J. Brannon, Waucoma, Iowa; Coyngham Bros., Wilkesbarre, Pennsylvania; Crawford & Griffin, Newton, Iowa; H. H. Ford, Storm Lake, Iowa; Alex Galbraith & Sons, DeKalb, Ill.; Laban Harrison, Prescott, Iowa; Hildebrand Bros., Gladbrook, Iowa; W. V. Hixson, Marengo, Iowa; Iowa Agricultural College, Ames, Iowa; J. Leitch & Sons, LaFayette, Ill.; McLay Bros., Janesville, Wis.; Jas. Pedley, Britt, Iowa; Frank Shekleton, Lawler, Iowa; A. G. Soderberg, Osco, Ill.; South Bros., Orion, Ill.

AWARDS.

JUDGE........................WM. MCKIRDY, Napinka, Man.

Stallion Four Years or Over—First, Dreadnaught, 16260, Alex Galbraith & Son; second, Rinaldo, 15435, J. Leitch & Sons; third, Westward Ho, 14495, Frank Shekleton; fourth, Forest King, 14076, James Pedley; fifth, Royal Irwin, 16156, McLay Bros.; sixth, Goldrock, 14494, Peter Birgen.

Stallion Over Three, Under Four—First, King Norman, 16159, McLay Bros.; second, Boreland, 16259, Alex Galbraith & Son; third, Prince Cedric, 16656, H. H. Ford; fourth, Lord Halsbury, 16145, J. Leitch & Sons; fifth, General Williams, 16655, Alex Galbraith & Son; sixth, Glenmorag, 16261, Alex Galbraith & Son.

Stallion Over Two, Under Three—First, Osco Pride, 15470, A. G. Soderberg; second, Russell, 16062, Laban Harrison; third, Prince Argosy, 15810, Alex Galbraith & Son; fourth, Lord Balcarries, 16160, McLay Bros.; fifth, Osco Stuart, 15468, A. G. Soderberg.

Stallion Over One, Under Two—First, Charnock, 16401, Alex Galbraith & Son; second, Monarch, 16651, J. Leitch & Sons; third, Baron Caliph, 16592, W. V. Hixson; fourth, The Model Prince, 6387, W. V. Hixson.

Stallion Foal—First, Pride of Hope, South Bros.

Stallion Three Years or Over, Bred by Exhibitor—First, Forest King, 14076, Jas. Pedley; second, Reliance, 14938, W. V. Hixson; third, Oscar Doune, 16137, J. J. Brannon; fourth, Keir Dauntless, 2nd, 14986, J. Leitch & Sons; fifth, Baron Dounes Choice, 15092, Frank Shekleton.

Stallion Under Three, Bred by Exhibitor—First, Osco Pride, 15470, A. G. Soderberg; second, Baron Caliph, 16592, W. V. Hixson; third, Osco Stuart, 15468, A. G. Soderberg; fourth, Kenneth, 16597, W. V. Hixson.

Mare Four Years or Over—First, Osco Bloss, 12056, A. G. Soderberg; second, May Palmerston, 15994, W. V. Hixson; third, Lady De Bathe, 14638, McLay Bros.; fourth, Floss, 16780, Finch Bros.; fifth, Osco Sweetness, 11117, South Bros.

Mare Over Three, Under Four—First, Graceful Lady, 14854, McLay Bros.; second, Beauty's Maid, 14857, South Bros.; third, Pride of Avondale, 14663, J. Leitch & Sons.

Filly Over Two, Under Three—First, Clifton Bell, 15530, W. V. Hixson; second, Osco Rose, 15467, A. G. Soderberg; third, Airlie Queen, 15979, J. Leitch & Sons; fourth, Flossie, 15862, W. V. Hixson; fifth, Florence, 15552, South Bros.

Filly Over One, Under Two—First, Lady Caliph, 16601, W. V. Hixson; second, Princess Mae, 16807, H. H. Ford; third, Osco Bell, 16279, A. G. Soderberg; fourth, Irene, 16609, J. Leitch & Sons.

Mare Foal—First, Lady Stuart, W. V. Hixson; second, Lady Demure, McLay Bros.; third, Lady Favorite, W. V. Hixson.

Mare Three Years or Over, Bred by Exhibitor—First, Graceful Lady, 14854, McLay Bros.; second, Osco Bloss, 12056, A. G. Soderberg; third, May Palmerston, 15994, W. V. Hixson; fourth, Pride of Avondale, 14663, J. Leitch & Sons; fifth, Lady Palmerston, 13565, W. V. Hixson.

Mare Under Three, Bred by Exhibitor—First, Osco Baron's Sweetness, 15466, A. G. Soderberg; second, Lady Caliph, 16601, W. V. Hixson; third, Princess Mae, 16807, H. H. Ford; fourth, Lady Favorite, W. V. Hixson; fifth, Clifton Bell, 15530, W. V. Hixson.

Champion Stallion—First, Charnock, 16401, Alex Galbraith & Son; second, King Norman, 16159, McLay Bros.

Champion Mare—First, Graceful Lady, 14854, McLay Bros.; second, Lady Caliph, 16601, W. V. Hixson.

Champion Stallion, Owned in Iowa—First, Cedric, 16656, H. H. Ford; second, Westward Ho, 14495, Frank Shekleton.

Champion Mare, Owned in Iowa—First, Lady Caliph, 16601, W .V. Hixson; second, Princess Mae, 16807, H. H. Ford.

Get of Stallion—First, A. G. Soderberg; second, W. V. Hixson; third, McLay Bros.

Produce of Mare—First, and second W. V. Hixson; third, J. Leitch & Sons; fourth, South Bros.

Grand Display—First, A. G. Soderberg; second, McLay Bros.; third and fourth, W. V. Hixson.

Five Stallions Owned by Exhibitor—Alex Galbraith.

CLYDESDALE FUTURITY SPECIALS.

Stallion Section—First, Charnock, 16401, Alex Galbraith; second, Monarch, 16651, J. Leitch & Sons; third, Baron Caliph, 16592, W. V. Hixson; fourth, The Model Prince, 16387, McLay Bros.; fifth, Kemeth, 16597, W. V. Hixson; sixth, McSandy, 16771, Iowa State College; seventh, Osco Peter, 16116, A. G. Soderberg.

Filly Section—First, Lady Caliph, 16601, W. V. Hixson; second, Princess Mae, 16807, H. H. Ford; third, Osco Bell, 16279, A. G. Soderberg; fourth, Irene, 16609, J. Leitch & Son; fifth, June C., 16222, South Bros.; sixth, Lilly Caliph, 16598, J. C. South; seventh, Princess Isabelle 2nd, Hildebrand Bros.

ENGLISH SHIRES.

EXHIBITORS.

Wm. Crownover, Hudson, Iowa; Robt. Dyer, Pleasantville, Iowa; Geo. Eggert, Newton, Iowa; Finch Bros., Joilet and Verona, Ill.; Alex Galbraith & Sons, DeKalb, Ill.; Wm. Hopley Est., Atlantic, Iowa; Frank E. Huston, Waukee, Iowa; Geo. M. McCray, Fithian, Ill.; Reuben Meyers, Fithian, Ill.; Jno. R. Rittenhouse, Mahomet, Illinois; Jno. A. Sage, Ankeny, Iowa; A. G. Soderberg, Osco, Ill.; Thurman's Woodbine Place, Blanchard, Iowa; Truman's Pioneer Stud Farm, Bushnell, Ill.; F. J. Woltman, Cedar Falls, Iowa.

AWARDS.

JUDGE........................R. B. OGILVIE, Chicago, Ill.

Stallion Four Years or Over—First, Dunsmore Willington Boy, III, (27294), Truman's Pioneer Stud Farm; second, Ashbeach Excelsior, Truman's Pioneer Stud Farm; third, Modlar Duke, (25424), Truman's Pioneer Stud Farm; fourth, Mardresfield Ermine, (30074), Truman's Pioneer Stud Farm; fifth, Abbott's Haymaker, (26950), Truman's Pioneer Stud Farm.

Stallion Over Three, Under Four—First, Lord Carlton, (30068), Truman's Pioneer Stud Farm; second, Dunsmore Royal Lad, (29338), Truman's Pioneer Stud Farm; third, March Pioneer, (28983), Truman's Pioneer Stud Farm; fourth, Buster Brown III, 12050, Wm. Crownover; fifth, Dyer's King, 11190, Robt. Dyer.

Stallion Over Two, Under Three—First, Carlton King, (30077), Truman's Pioneer Stud Farm; second, Comet VIII, (29257), Truman's Pioneed Stud Farm; third, Sarfleet King, (29922), Truman's Pioneer Stud Farm; fourth, Burgh Harold, (29181), Truman's Pioneer Stud Farm.

Stallion Over One, Under Two—First, Carlton Royal Grey, (30078), Truman's Pioneer Stud Farm; second, Cecil Rhodes, 12701, J. R. Rittenhouse; third, Bourgeon's Flash, 13192, Geo. M. McCray; fourth, Eugene of Enfield, 12669, Geo. M. McCray.

Stallion Foal—First, Maple Dale Masterpiece, 13227, Wm. Crownover; second, J. A. Sage.

Stallion Three Years or Over, Bred by Exhibitor—First, Dyer's King, 11190, Robt. Dyer.

Stallion Under Three, Bred by Exhibitor—First, Brown Bob, Geo. Eggert; second, Osco Joy, 12485, A. G. Soderberg; third, Finch Bros.; fourth, Maple Dale Masterpiece, 13227, Wm. Crownover.

Mare Four Years or Over—First, Dowsby Sunbeam, 12735, Alex Galbraith & Son; second, Nottingham Energy, 10712, Wm. Hopley, Est.; third, Lady Brown, 10973, Frank E. Huston; fourth, Ankeny Flora, 10528, J. A. Sage.

Filly Over Three, Under Four—First, Waldersee Hall Rose 2nd, (65286), Truman's Pioneer Stud Farm; second, Joliet Peach, 12079, Finch Bros.; third, Graby Easter Gift, 12782, Geo. Eggert.

Filly Over Two, Under Three—First, Crocus, (65597), Truman's Pioneer Stud Farm; second, Frithville Princess, (65598), Truman's Pioneer Stud Farm; third, Finch's Gloaming, 12477, Finch Bros.; fourth, Finch's Best, 12080, Finch Bros.

Filly Over One, Under Two—First, Paramount Esther, 12529, Wm. Crownover; second, Lady Trenant, 13226, Wm. Crownover; third, Lincolnshire Queen, 12712, Finch Bros.; fourth, Baby Alice, 13212, Jno. R. Rittenhouse.

Mare Foal—First, Pine Krest Primrose, 13225, Frank E. Huston; second, Oak Lawn Easter Rose, 13247, Geo. Eggert; third, Grove Duchess, Wm. Hopley Est.

Mare Three Years or Over, Bred by Exhibitor—First, Ankeny Flora, 10528, J. A. Sage; second, Finch Bros.; third, Fashion Plate, 8771, J. A. Sage.

Mare Under Three, Bred by Exhibitor—First, Pine Krest Princess, Frank E. Huston; second, Paramount Esther, Wm. Crownover; third, Gertie Kile, 12775, J. A. Sage; fourth, Finch Bros.

Champion Stallion—First, Lord Carlton, (30068), Truman's Pioneer Stud Farm; second, Carlton Royal Grey, (30078), Truman's Pioneer Stud Farm.

Champion Mare—First, Frithville Princess (65588), Truman's Pioneer Stud Farm; second, Pine Krest Primrose, 13225, Frank E. Huston.

Champion Stallion, Owned in Iowa—First, Brown Bob, 12462, Geo. Eggert; second, Bickster King, Wm. Crownover.

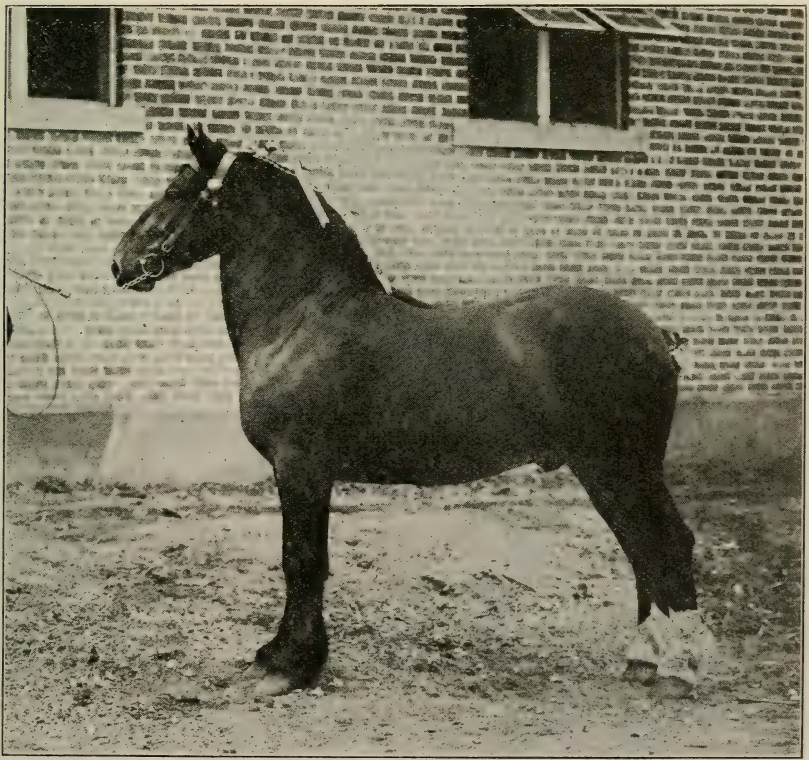
Champion Mare, Owned in Iowa—First, Pine Krest Primrose, 13225, Frank E. Huston; second, Paramount Esther, 12529, Wm. Crownover.

Get of Stallion—First, Wm. Crownover; second, Finch Bros.; third, Frank E. Huston.

Produce of Mare—First, Wm. Hopley Est.; second, Frank E. Huston; third, Finch Bros.; fourth, J. A. Sage.

Grand Display—First, Finch Bros.

Five Stallions Owned by Exhibitor—Truman's Pioneer Stud Farm.



SHIRE YEARLING FUTURITY WINNER
Iowa State Fair, 1912

SPECIAL PRIZES OFFERED BY THE SHIRE HORSE SOCIETY OF ENGLAND.

Best Shire Stallion—First, Lord Carlton, (30068), Truman's Pioneer Stud Farm; second, Carlton Royal Grey, (30078), Truman's Pioneer Stud Farm.

Best Shire Mare—First, Frithville Princess, (65598), Truman's Pioneer Stud Farm; second, Pine Krest Primrose, 13225, Frank E. Huston.

SPECIAL PRIZES OFFERED BY THE AMERICAN SHIRE HORSE ASSOCIATION.

Champion Stallion, Any Age—First, Lord Carlton, (30068), Truman's Pineer Stud Farm; second, Carlton Royal Grey, (30078), Truman's Pioneer Stud Farm.

Champion Mare, Any Age—First, Frithville Princess, (65598), Truman's Pioneer Stud Farm; second, Pine Krest Primrose, 13225, Frank E. Huston.

SHIRE FUTURITY SPECIALS.

Stallion Section—First, Cecil Rhodes, 12701, Jno. R. Rittenhouse; second, Bourgeon's Flash, 13192, Geo. McCray; third, Eugene of Enfield, 12669, Geo. McCray; fourth, Grove Harold, 12951, Wm. Hopley Est.; fifth, Royalist, 13158, Finch Bros.; sixth, Buscot, John, 13017, A. G. Soderberg; seventh, Pine Krest Patterson, 13223, Frank E. Huston; eighth, King John, 12671, Geo. McCray.

Filly Section—First, Paramount Esther, 12529, Wm. Crownover; second, Lady Trenant, 13226, Wm. Crownover; third, Lincolnshire Queen, 12712, Finch Bros.; fourth, Lady Alice, 13212, Jno. R. Rittenhouse; fifth, Bonny Royal, 13252, Truman's Pioneer Stud Farm; sixth, Osco Princess, 12825, A. G. Soderberg; seventh, Pine Krest Princess, 13224, Frank E. Huston.

BELGIANS.

EXHIBITORS.

G. E. Cole, Fonda, Iowa; Crawford and Griffen, Newton, Iowa; Wm. Crownover, Hudson, Iowa; Geo. Eggert, Newton, Iowa; W. C. Estes, Packwood, Iowa; Finch Bros., Joilet and Verona, Ill.; R. F. French, Independence, Iowa; G. W. Grigsby, Madrid, Iowa; Hildebrand Bros., Gladbrook, Iowa; Iowa Agricultural College, Ames, Iowa; Chas. Irvine, Ankeny, Iowa; C. E. Jones, Livermore, Iowa; J. A. Loughridge, Delta, Iowa; Henry Lefebure, Fairfax, Iowa; G. A. McCarty, Princeville, Ill.; C. W. McDermott, Wiota, Iowa; J. N. B. Miller, Corning, Iowa; Ernest Pancake, Ransom, Ill.; W. V. R. Powis, Wayne, Ill.; Carl A. Rosenfeld, Kelley, Iowa; Truman's Pioneer Stud Farm, Bushnell, Ills.

AWARDS.

JUDGE........................ALEX GALBRAITH, DeKalb, Ill.

Stallion Four Years or Over—First, Jules Remi, 6166, H. Lefebure; second, Robt. De Rune, Chas. Irvine; third, Truman's Pioneer Stud Farm; fourth, Dulci, 72592, Finch Bros.; fifth, Porthos de Sarlardinge, 6214, (63114), Wm. Crownover; sixth, Pet De None, 5953, Chas. Irvine.

Stallion Over Three, Under Four—First, Villiant De Merfes, 6231, Geo. Eggert; second, Max De Grace, 6230, Geo. Eggert; third, Danube, 5491, Chas. Irvine; fourth, Robert, G. E. Cole; fifth, Espoir Laling, 6162, H. Lefebure.

Stallion Over Two, Under Three—First, Picha, 72578, Finch Bros.; second, Truman's Pioneer Stud Farm; third, Bolle De Lalys, 72588, Finch Bros.; fourth, Rob Roy, 5677, C. W. McDermott; fifth, R. F. French.

Stallion Over One, Under Two—First, Rubicon, 6359, Finch Bros.; second, Le Predecateur, 6574, Chas. Irvine; third, Nicholas, 6536, C. W. McDermott; fourth, Bon De Onker, 6685, G. W. Grigsby; fifth, Wm. Crownover.

Stallion Foal—First, Prince Bleddyn, 6679, W. V. R. Powis; second, Irvindale Prince, Chas. Irvine.

Stallion Three Years or Over, Bred by Exhibitor—First, Finch Bros.

Stallion Under Three, Bred by Exhibitor—First, Finch Bros.; second Jean d' Or, 6573, Chas. Irvine; third, Nicholas, 6536, C. W. McDermott; fourth, Raymond, 6319, W. C. Estes; fifth, Prince Bleddyn, 6679, W. V. R. Powis.

Mare Four Years or Over—First, Laura, 2466, Finch Bros.; second, Flora, 941 (61501), J. N. B. Miller; third, Madam 2nd, 399, J. A. Loughridge; fourth, Martha Der Haerten, (61537), Geo. Eggert; fifth, Colette, 1316, R. F. French.

Filly Over Three, Under Four—First, Bella Terlinden, (2793), R. F. French; second, Flavie, 1300, Chas. Irvine; third, Albonie, 26960, H. Lefebure; fourth, Mika, 80627, Finch Bros.; fifth, Finch Bros.

Filly Over Two, Under Three—First, Luzette, 1526, H. Lefebure; second, Floride de Vlad, 2802, R. F. French; third, Florence, 855, J. N. B. Miller; fourth, Claire, 2796, R. F. French; fifth, Portia, J. A. Loughridge.

Filly Over One, Under Two—First, Elsie, 2368, G. A. McCarty; second, Lafleure, 2595, Ernest Pancake; third, Madam of Delta, 2820, J. A. Loughridge; fourth, Maria, 2596, Ernest Pancake; fifth, Miss Fosteau, 2831, Carl A. Rosenfeld; sixth, Christine Ware, 2795, R. F. French; seventh; Blue Belle, 2666, Chas. Irvine.

Mare Foal—First, Finch Bros.; second, Paulette, Chas. Irvine; third, Jeanette Rosengift, Carl A. Rosenfeld; fourth, Lorette, Chas. Irvine; fifth, Ruby, Chas. Irvine.

Mare Three Years or Over, Bred by Exhibitor—First, Miss Nora, 620, W. C. Estes.

Mare Under Three, Bred by Exhibitor—First, Elsie, 2368, G. A. McCarty; second, Madam of Delta, 2820, J. A. Loughridge; third, Florence, 855, J. N. B. Miller; fourth, Blue Belle, 2666, Chas. Irvine; fifth, Finch Bros.

Champion Stallion—First, Villiant De Merfes, 6231, Geo. Eggert; second, Rubicon, 6359, Finch Bros.

Champion Mare—First, Laura, 2466, Finch Bros.; second, Luzette, 1526, Henry Lefebure.

Champion Stallion, Owned in Iowa—First, Villiant De Merfes, 6231, Geo. Eggert; second, Jules Remi, 6166, H. Lefebure.

Champion Mare, Owned in Iowa—First, Luzette, 1526, Henry Lefebure; second, Flora, 941 (61501), J. N. B. Miller.

Get of Stallion—First, Chas. Irvine.

Produce of Mare—First, Finch Bros.; second, J. N. B. Miller; third, Wm. Crownover; fourth, Carl A. Rosenfeld; fifth, J. A. Loughridge.

Grand Display—First, Chas. Irvine.

Five Stallions, Owned by Exhibitor—First, Finch Bros.; second, H. Lefebure.

SPECIAL PRIZES OFFERED BY THE AMERICAN ASSOCIATION OF IMPORTERS AND BREEDERS OF BELGIAN DRAFT HORSES.

Stallion Four Years Old and Over—First, Jules Remi, 6166, H. Lefebure; second, Robert De Rune, 3595 (46686), Chas. Irvine; third, Truman's Pioneer Stud Farm; fourth, Dulci, 72592, Finch Bros.; fifth, Porthos de Sarlardinge, 6214 (63114), Wm. Crownover.

Stallion Three Years Old and Under Four—First, Villiant De Merfes, (6231), Geo. Eggert; second, Max De Grace, 6230, Geo. Eggert; third, Danube, 5491, Chas. Irvine; fourth, Robert, G. E. Cole; fifth, Espoir Laling, 6162, H. Lefebure.

Stallions Two Years old and Under Three—First, Picha, 72578, Finch Bros.; second, Truman's Pioneer Stud Farm; third, Bolle De La Lys, 72588, Finch Bros.; fourth, Rob Roy, 5677, C. W. McDermott; fifth, Comet, 5803, R. F. French.

Five Stallions, Owned by One Exhibitor—First, Finch Bros.; second, H. Lefebure.

Champion Stallion—First, Villiant De Merfes, 6231, Geo. Eggert; second, Rubicon, 6359, Finch Bros.

Champion Mare—First, Laura, 2466, Finch Bros.; second, Luzette, 1526, H. Lefebure.

BELGIAN FUTURITY SPECIALS.

Stallion Section—First, Rubicon, 6359, Finch Bros.; second, Roger, 6634, Iowa State College; third, Jean d' Or, Chas. Irvine; fourth, Nicholas, C. W. McDermott; fifth, Bon d' Onker, 6685, G. W. Grigsby; sixth, Paramount Rex, Wm. Crownover; seventh, Creitien, 6620, Finch Bros.

Filly Section—First, Elsie, 2368, G. A. McCarty; second, Lafleur, Ernest Pancake; third, Madam of Delta, 2820, J. A. Loughridge; fourth, Maria, Ernest Pancake; fifth, Miss Fosteau, Carl A. Rosenfeld; sixth, Blue Belle, Chas. Irvine; seventh, Mona Lisa, 2408, W. V. R. Powis.

Lefebure Stallion Special—First, Roger, Iowa State College; second, Jean d' Or, Chas. Irvine.

Lefebure Filly Special—First, Madam of Delta, J. A. Loughridge; second, Blue Belle, Chas. Irvine.

DRAFT GELDINGS AND MARES.

EXHIBITORS.

Jno. Albaugh, Ankeny, Iowa; Garrie R. Bishop, Mitchellville, Iowa; G. E. Cole, Fonda, Iowa; Crawford & Griffin, Newton, Iowa; C. B. Dannen & Sons, Melbourne; Loren Dunbar, Earlham; Geo. Eggert, Newton, Iowa; R. F. French, Independence; G. W. Grigsby, Madrid, Iowa; Sam Hague, Van Meter, Iowa; W. V. Hixson, Marengo, Iowa; J. L. Howard, Ankeny, Iowa; Frank E. Huston, Waukee, Iowa; Chas. A. Irvine, Ankeny, Iowa; J. A. Loughridge, Delta, Iowa; McLay Bros., Janesville, Wis.; Morris & Co., Chicago, Ill.; Martin Nelson, Cambridge, Iowa; Carl A. Rosenfeld, Kelley, Iowa; J. A. Sage, Ankeny, Iowa; South Bros., Orion, Ill.; J. W. Thompson, Ankeny, Iowa; Truman's Pioneer Stud Farm, Bushnell, Ill.

AWARDS.

JUDGE..........................R. B. OGILVIE, Chicago, Ill.

Gelding or Mare Four Years or Over—First, Fannie, G. E. Cole; second, Charlie, G. W. Grigsby; third, Bessie, Jno. S. Albaugh; fourth, Nellie, G. E. Cole; fifth, Maude, J. W. Thompson.

Gelding or Mare Three Years, and Under Four—First, Kate, G. W. Grigsby.

Gelding or Mare Two Years, and Under Three—First, Queen, Jno. S. Albaugh; second, Alice, Jno. S. Albaugh; third, John, G. W. Grigsby; fourth, Garrie R. Bishop.

Gelding or Mare One Year, and Under Two—First, Maude, Crawford & Griffin; second, Dandy, Geo. Eggert; third, G. E. Cole; fourth, Barney, J. W. Thompson.

Horse or Filly Foal—First, Dolly, J. L. Howard; second, James, J. W. Thompson; third, Brinker, Geo. Eggert; fourth, G. E. Cole.

HILDEBRAND

CHAMPION FARM TEAM
Iowa State Fair 1912

Farmer's Team—First, Frank E. Huston; second, R. F. French; third, G. W. Grigsby; fourth, G. E. Cole; fifth, C. B. Dannen & Sons; sixth, Martin Nelson.

Gelding or Mare Four Years or over—First, Walter, Morris & Co.; second, Hector, Morris & Co.; third, Archie, Morris & Co.; fourth, Fannie, G. E. Cole; fifth, Nellie, G. E. Cole.

Draft Team in Harness—First, Morris & Co.; second, Frank E. Huston; third, G. E. Cole; fourth, C. B. Dannen & Sons; fifth, Martin Nelson.

Champion Mare or Gelding—First, Fannie, G. E. Cole; second, Charlie, G. W. Grigsby.

Four Horse Team—First, Morris & Co.

Six Horse Team—First, Morris & Co.

STANDARD BRED TROTTERS.

EXHIBITORS.

Kathryn Anderson, Des Moines, Iowa; N. Bartholomew, Des Moines, Iowa; Thos. Bass, Mexico, Mo.; Fred Crawford, Des Moines, Iowa; C.

G. Dallas, Muscatine, Iowa; E. A. Elliott, Des Moines, Iowa; J. B. Foltz, Stuart, Iowa; M. T. Grattan, Preston, Minn.; L. M. Griffin, Casey, Iowa; Mrs. Ira Hall, Des Moines, Iowa; Hook & Woods, Paris, Mo.; Houchin & Anderson, Jefferson City, Mo.; Linn Hill Park Stock Farm, Harlan, Iowa; F. A. Mathis, Des Moines, Iowa; Dr. A. E. Merkel, Berwick, Iowa; O. J. Mooers, Columbia, Mo.; New Bloomfield Saddle Horse Co., New Bloomfield, Mo.; J. R. Peak & Son, Winchester, Ill.; Ed. Person, Carlisle, Iowa; R. L. Porter, Des Moines, Iowa; Chas. W. Smith, Des Moines, Iowa; Thos. F. Stevenson, Des Moines, Iowa; I. Ross Thompson, Des Moines, Iowa; H. C. Young, Des Moines, Iowa.

AWARDS.

JUDGE.....................W. A. DOBSON, Des Moines, Iowa.

Stallion Four Years or Over—First, Tommy Doyle, 50361, J. R. Peak & Son; second, Thos. Bass; third, Red Maco, L. M. Griffin; fourth, Hook & Woods.

Stallion Over Three, Under Four—First, Red Francis, Jr., J. R. Peak & Son; second, Gournea, 55835, J. R. Peak & Son; third, Lac Allerton, 51681, Thos. F. Stevenson; fourth, Onwood Attorney, 51352, Linn Hill Park Stock Farm.

Stallion Over Two, Under Three—First, Isaac R. T., 54480, I. Ross Thompson; second, Dr. A. E. Merkel; third, Elpes, 57492, J. R. Peak & Son; fourth, J. B. A., 55733, F. A. Mathis.

Stallion Over One, Under Two—First, McDumpling, J. R. Peak & Son.

Stallion Foal—First, Harvest Reaper, J. R. Peak & Son.

Mare Four Years or Over—First, Hasting Girl, Houchin & Anderson; second, Lady Jeannette, Vol. 18, J. R. Peak & Son; third, J. R. Peak & Son; fourth, Cora Peak, Vol. 18, J. R. Peak & Son.

Filly Over Three, Under Four—First, Wizzard of Blizzard, Vol. 19, J. R. Peak & Son; second, Maude Clarke, Vol. 19, J. R. Peak & Son.

Filly Over Two, Under Three—First, Tommy Toney, Vol. 20, J. R. Peak & Son; second, Philae, Mrs. Ira Hall; third, N. Bartholomew; fourth, St. Louis Maid, Vol. 20, J. R. Peak & Son.

Filly Over One, Under Two—First Myriam, Vol. 20, J. R. Peak & Son; second, Mamie Earl, Fred Crawford; third, Fay Cord, Fred Crawford.

Mare Foal—First, Baby M, Dr. A. E. Merkel; second N. Bartholomew.

Champion Stallion—First Tommy Doyle, 50361, J. R. Peak & Son; second, Harvest Reaper, J. R. Peak & Son.

Champion Mare—First, Hasting Girl, Houchin & Anderson; second, Wizzard of Blizzard, J. R. Peak & Son.

Get of Stallion—First, J. R. Peak & Son; second, N. Bartholomew.

Produce of Mare—First, J. R. Peak & Son; second, J. R. Peak & Son; third, Linn Hill Park Stock Farm.

Grand Display—First, J. R. Peak & Son; second, J. R. Peak & Son.

AMERICAN CARRIAGE HORSES.

EXHIBITORS.

Kathryn Anderson, Des Moines, Iowa; J. B. Baker, Waverly, Iowa; Thos. Bass, Mexico, Missouri; Jos. C. Brunk, Springfield, Illinois; Fred Crawford, Des Moines, Iowa; H. C. Davis, Ames, Iowa; E. A. Elliott, Des Moines; W. & A. Graham, Des Moines; M. T. Gratten, Preston, Minnesota; Hamilton Bros., Keota, Iowa; Hook & Woods, Paris, Missouri; Houchin & Anderson, Jefferson City, Missouri; E. Kingsley, Waverly, Iowa; Linn Hill Park Stock Farm, Harlan, Iowa; F. A. Mathis, Des Moines, Iowa; Dr. A. E. Merkel, Berwick, Iowa; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Columbia, Missouri; Morgan Horse Farm, Plainfield, Iowa; New Bloomfield Saddle Horse Company, New Bloomfield, Missouri; J. R. Peak & Son, Winchester, Illinois; R. L. Porter, Des Moines, Iowa; Chas. W. Smith, Des Moines, Iowa; P. F. Smith, Montezuma, Iowa; I. Ross Thompson, Des Moines, Iowa; Wm. Timmerman, Manning, Iowa; Ed P. Urick, Kansas City, Kansas; University of Minnesota, St. Paul, Minnesota; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE....................W. A. DOBSON, Des Moines, Iowa.

Stallion Four Years or Over—First, Advance Guard, O. J. Mooers; second, Tommy Doyle, 50261, J. R. Peak & Son; third, Cleveland Reed, Thos. Bass; fourth, Melrose, Wild Rose Farm; fifth, O. J. Mooers.

Stallion Over Three, Under Four—First, Roseland, Wild Rose Farm; second, Gournea, 55835, J. R. Peak & Son; third, Red Francis Jr., 57491, J. R. Peak & Son; fourth, Madison McDonald, Hook & Woods.

Stallion Over Two, Under Three—First, Rosemont, Wild Rose Farm; second, Red Ethan, 6239, Jos. C. Brunk; third, Crow McDonald, Hook & Woods; fourth, Kentucky Jay Jr., Dr. A. E. Merkel; fifth, Major Gans, Vol. 3, Morgan Horse Farm.

Stallion Over One, Under Two—First, McDumpling, J. R. Peak & Son; second, The Jew, Thos. Bass; third, Hook & Woods; fourth, Prime O, 6590, P. F. Smith; fifth, Montgomery, Vol. 3, Morgan Horse Farm.

Stallion With Three of His Get—First, J. R. Peak & Son; second, Morgan Horse Farm; third, P. F. Smith.

Mare Four Years or Over—First, O. J. Mooers; second, Bell Rose, Wild Rose Farm; third, Lally P, O. J. Mooers; fourth, Thos. Bass; fifth, Queen of Spades, Wild Rose Farm.

Mare Over Three, Under Four—First, Lucy Caldwell, 6512, Thos. Bass; second, Wizzard of Blizzard, J. R. Peak & Son; third, Maude Clark, Vol. 19, J. R. Peak & Son.

Mare Over Two, Under Three—First, Primrose, Wild Rose Farm; second, Tommy Toney, Vol. 20, J. R. Peak & Son; third, Cricket C, 6772, Hamilton Bros.; fourth, Ruth May Reade, Thos. Bass; fifth, Pauline Mac, 9188, Hamilton Bros.

Stallion or Mare Foal—First, Harvest Reaper, J. R. Peak & Son; second, Sentiment, Jos. C. Brunk; third, Baby M, Dr. A. E. Merkel; fourth, Topsy, P. F. Smith.

Champion Stallion—First, Advance Guard, O. J. Mooers; second, Rosemont, Wild Rose Farm.

Champion Mare—First, Flirting Princess, O. J. Mooers; second, Primrose, Wild Rose Farm.

RUN-ABOUT.

EXHIBITORS.

Kathryn Anderson, Des Moines, Iowa; Thos. Bass, Mexico, Mo.; Jos. C. Brunk, Springfield, Illinois; A. L. Champlin, Ames, Iowa; T. C. Evans, Independence, Missouri; W. & A. Graham, Des Moines, Iowa; Hook & Woods, Paris, Missouri; J. Leitch & Sons, LaFayette, Illinois; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Columbia, Missouri; J. R. Peak & Son, Winchester, Illinois; R. L. Porter, Des Moines, Iowa; P. F. Smith, Montezuma, Iowa; Ed. P. Uhrich, Kansas City, Kansas; University of Minnesota, St. Paul, Minnesota; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.
JUDGE.....................WALTER PALMER, Ottawa, Illinois.

Stallion, Mare or Gelding—First, O. J. Mooers; second, Royal Regent, O. J. Mooers; third, Lena Collins, Thos. Bass; fourth, Sub Rosa, Wild Rose Farm.

Pair Stallions, Mares or Geldings—First and second, O. J. Mooers; third, Wild Rose Farm.

Stallion, Mare or Gelding (Local)—Second, A. L. Champlin.

FAMILY TURNOUTS.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; A. L. Champlin, Ames, Iowa; W. & A. Graham, Des Moines, Iowa; Hamilton Bros., Keota, Iowa; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Columbia, Missouri; J. R. Peak & Son, Winchester, Illinois; R. L. Porter, Des Moines, Iowa; Ed. P. Uhrich, Kansas City, Kansas; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.
JUDGE.....................WALTER PALMER, Ottawa, Illinois.

Single Horse Family Turnout—First, Fair Eliza, 19061, A. L. Champlin; second, The Tourist, Ed. P. Uhrich; third, Molly McDonald, W. & A. Graham; fourth, Lucy, Thos. Bass.

LADIES' TURNOUT.

EXHIBITORS.

Kathryn Anderson, Des Moines, Iowa; Thos. Bass, Mexico, Missouri; A. L. Champlin, Ames, Iowa; T. C. Evans, Independence, Missouri; W. & A. Graham, Des Moines, Iowa; Jas. Grinstead, Jr., Mitchellville, Iowa; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Columbia, Missouri; J. R. Peak & Son, Winchester, Illinois; Ed. P. Uhrich, Kansas City, Kansas; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.
JUDGE.....................WALTER PALMER, Ottawa, Illinois.

Single Mare or Gelding—First, The Chocolate Soldier, O. J. Mooers; second, Montrose, Wild Rose Farm; third, Lady McDonald B, 3480, W. & A. Graham; fourth, Ed. P. Uhrich.

Pair Mares or Geldings or Mare and Gelding—First, O. J. Mooers; second, Wild Rose Farm; third, W. & A. Graham; fourth, A. L. Champlin.

BROUGHAM HORSES.

EXHIBITORS.

A. L. Champlin, Ames, Iowa; W. & A. Graham, Des Moines, Iowa; O. J. Mooers, Columbia, Missouri; J. R. Peak & Son, Winchester, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.

Mare or Gelding to Brougham or Victoria—First, Jap Rose, Wild Rose Farm; second, The Chocolate Soldier, O. J. Mooers; third, Fair Eliza, 19061, A. L. Champlin.

Pair Mares or Geldings, or Mare and Gelding—First, Wild Rose Farm; second, O. J. Mooers, third, A. L. Champlin.

HIGH STEPPERS AND PARK HORSES.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; A. L. Champlin, Ames, Iowa; H. C. Davis, Ames, Iowa; T. C. Evans, Independence, Missouri; W. & A. Graham, Des Moines, Iowa; Hamilton Bros., Keota, Iowa; Geo. A. Heyl, Washington, Illinois; J. Leitch & Sons, LaFayette, Illinois; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Columbia, Missouri; J. R. Peak & Son, Winchester, Illinois; R. L. Porter, Des Moines, Iowa; P. F. Smith, Montezuma, Iowa; Truman's Pioneer Stud Farm, Bushnell, Illinois; Ed. P. Uhrich, Kansas City, Kansas; Wild Rose Farm, St. Charles, Illinois;

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.
JUDGE.....................WALTER PALMER, Ottawa, Illinois.

Stallion, Mare or Gelding up to 15-2—First, Moss Rose, Wild Rose Farm; second, Montrose, Wild Rose Farm; third, O. J. Mooers; fourth, Mary Cary, O. J. Mooers.

Stallion, Mare or Gelding 15-2 and Over—First, Jap Rose, Wild Rose Farm; second, O. J. Mooers; third Bell Rose, Wild Rose Farm; fourth, Rose Man, Wild Rose Farm.

Pair Stallions, Mares or Geldings up to 15-2 and Under—First, O. J. Mooers; second, Wild Rose Farm; third, O. J. Mooers; fourth, Wild Rose Farm.

Pair Stallions, Mares or Geldings Over 15-2—First, Wild Rose Farm; second, O. J. Mooers; third, Wild Rose Farm; fourth, J. R. Peak & Son.

Stallion, Mare or Gelding (Local)—First, A. L. Champlin; second and third, W. & A. Graham; fourth, H. C. Davis.

Pair Stallions, Mares or Geldings (Local)—Second, W. & A. Graham.

GIG HORSES.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; A. L. Champlin, Ames, Iowa; T. C. Evans, Independence, Missouri; W. & A. Graham, Des Moines, Iowa; Geo. A. Heyl, Washington, Illinois; J. Leitch & Sons, LaFayette, Illinois; O. J. Mooers, Columbia, Missouri; J. R. Peak & Son, Winchester, Illinois; Truman's Pioneer Stud Farm, Bushnell, Illinois; Ed. P. Uhrich, Kansas City, Kansas; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.
JUDGE.....................WALTER PALMER, Ottawa, Illinois.

Horses not Exceeding 15-2—First, Moss Rose, Wild Rose Farm; second, Montrose, Wild Rose Farm; third, O. J. Mooers; fourth, A. L. Champlin.

Horses Over 15-2—First, Jap Rose, Wild Rose Farm; second, Belle Rose, Wild Rose Farm; third, The Queen of Action, O. J. Mooers; fourth, The Chocolate Soldier, O. J. Mooers.

TANDEMS.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; A. L. Champlin, Ames, Iowa; T. C. Evans, Independence, Missouri; Geo. A. Heyl, Washington, Illinois; O. J. Mooers, Columbia, Missouri; J. R. Peak & Son, Winchester, Illinois; Ed. P. Uhrich, Kansas City, Kansas; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.

Tandem Team, Wheeler Over 15-2—First, O. J. Mooers; second, J. R. Peak & Son; third, A. L. Champlin.

Tandem Team, Wheeler Under 15-2—First, O. J. Mooers; second, Wild Rose Farm; third, J. R. Peak & Son; fourth, A. L. Champlin.

UNICORNS.

EXHIBITORS.

A. L. Champlin, Ames, Iowa; O. J. Mooers, Columbia, Missouri; J. R. Peak & Son, Winchester, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.

Unicorn Team—First, Wild Rose Farm; second, O. J. Mooers; third, J. R. Peak & Son; fourth, A. L. Champlin.

FOUR-IN-HAND.

EXHIBITORS.

A. L. Champlin, Ames, Iowa; O. J. Mooers, Columbia, Missouri; J. R. Peak & Son, Winchester, Illinois; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.

Road Four—First, Wild Rose Farm; second, O. J. Mooers; third, J. R. Peak & Son; fourth, A. L. Champlin.

Park Four—First, Wild Rose Farm; second, O. J. Mooers; third, J. R. Peak & Son; fourth, A. L. Champlin.

CHAMPION HARNESS HORSES.

Champion Harness Stallion—First, Advance Guard, O. J. Mooers; second, Roseland, Wild Rose Farm.

Champion Harness Mare or Gelding—First, Jap Rose, Wild Rose Farm; second, The Flirting Princess, O. J. Mooers.

SADDLE HORSES.

EXHIBITORS.

Thos. Bass, Mexico, Missouri; Ed. Clapper, Unionville, Missouri; R. W. Crumpacker, Unionville, Missouri; T. C. Evans, Independence, Missouri; W. & A. Graham, Des Moines, Iowa; Hamilton Bros., Keota, Iowa; Hillcrest Farm, Ottumwa, Iowa; Hook & Woods, Paris, Missouri; Houchin

& Anderson, Jefferson City, Missouri; Miss Lulu Long, Kansas City, Missouri; C. E. Monahan, Des Moines, Iowa; O. J. Mooers, Columbia, Missouri; New Bloomfield Saddle Horse Company, New Bloomfield, Missouri; J. R. Peak & Son, Winchester, Illinois; H. H. Polk, Des Moines, Iowa; R. L. Porter, Des Moines, Iowa; Bruce Robinson, Washington, Iowa; Mrs. Adam Sterling, Des Moines, Iowa; Ed. P. Uhrich, Kansas City, Kansas; University of Minnesota, St. Paul, Minnesota; Wild Rose Farm, St. Charles, Illinois; Fred Williams, Barnes City, Iowa.

AWARDS.

JUDGE.....................WALTER PALMER, Ottawa, Illinois.

Gelding or Mare Four Years or Over—First, Kymokan, Miss Lulu Long; second, Gingerbread Man, Thos. Bass; third, Eva McDonald, Hook & Woods; fourth, Frances McDonald, Thos. Bass; fifth, Helen Hicklin, Houchin & Anderson.

Gelding or Mare Over Three, Under Four—First, Anna Bell, Hook & Woods; second, Forest Nala, Houchin & Anderson; third, Nat Goodwin, Hook & Woods; fourth, Raven H, Hamilton Bros.; fifth, Rev. Wood, Thos. Bass.

Stallion Four Years and Over—First, Astral King, Houchin & Anderson; second, Rex Chief A, Thos. Bass; third, Marshall Chief, Hook & Woods; fourth, Hook & Woods; fifth, Harold Denmark, Ed. Clapper.

Stallion Over Three, Under Four—First, Fantastic King, O. J. Mooers; second, Madison McDonald, Hook & Woods; third, Rob C. Denmark, R. W. Crumpacker; fourth, Randof King, Thos. Bass.

Champion Stallion, Mare or Gelding—First, Kymokan, Miss Lulu Long; second, Gingerbread Man, Thos. Bass.

Mare or Gelding Ridden by Lady—First, Hook & Woods; second, Frances Ferbs, 7123, New Bloomfield Saddle Horse Co.; third, Molly McDonald B, W. & A. Graham; fourth, Grey King, Bruce Robinson; fifth, Frances McDonald, Thos. Bass.

Stallion Two Years Old, Shown in Hand—First, Crow McDonald, Hook & Woods; second, Thos. Bass.

Mare Two Years Old, Shown in Hand—First, Cricket C, 6772, Hamilton Bros.; second, Martha Jewett, Hook & Woods; third, Pauline Mack, 9188, Hamilton Bros.; fourth, Thos. Bass.

WALK, TROT AND CANTER.

Mare or Gelding, Any Age—First, Poetry of Motion, O. J. Mooers; second, Pauline Moore, Houchin & Anderson; third, Hook & Woods; fourth, Grey McDonald, Hamilton Bros.; fifth, Lady McDonald B, W. & A. Graham.

Stallion, Any Age—First, Rex Chief A, Thos. Bass; second, O. J. Mooers; third, Marshall Chief, Hook & Woods; fourth, Artis Montrose, Fred Williams; fifth, Mc G, 2814, Bruce Robinson.

COMBINED HARNESS AND GAITED SADDLE HORSES.

Stallion, Mare or Gelding, Any Age—First, Kymokan, Miss Lulu Long; second, Hook & Woods; third, Frances Ferbs, New Bloomfield Saddle Horse Co.; fourth, Rex Arbuckle, Thos. Bass; fifth, O. J. Mooers.

HIGH SCHOOL HORSES.

Stallion, Mare or Gelding, Any Age—First, The Bell, Thos. Bass; second, Anna Sims, 8620, Hamilton Bros.; third, Ed. P. Uhrich; fourth, Chief, H. H. Polk; fifth, Sir Knight, Hamilton Bros.

LOCAL, FIVE GAITED.

Mare or Gelding Three Years or Over—First, Hamilton Bros.; second, Lady McDonald B, W. & A. Graham; third, Mabel Ford, 8639, Mrs. Adam Stirling; fourth, Tony H, Hamilton Bros.

Stallion Two Years or Over—First, McG, 2814, Bruce Robinson; second, Artis Montrose Squirrel, Fred Williams.

SPECIAL PRIZE OFFERED BY THE AMERICAN SADDLE HORSE BREEDERS' ASSOCIATION.

Stallion or Mare Three Years Old or Under—First, Pauline Mack, 9188, Hamilton Bros.

MORGANS.

EXHIBITORS.

J. E. Bailey, Iowa Falls, Iowa; J. B. Baker, Waverly, Iowa; Thos. Bass, Mexico, Missouri; E. F. Brown, Derby, Iowa; Joseph C. Brunk, Springfield, Illinois; H. C. Davis, Ames, Iowa; E. Kingsley, Waverly, Iowa; O. J. Mooers, Columbia, Missouri; Morgan Horse Farm, Plainfield, Iowa; P. F. Smith, Montezuma, Iowa; Wild Rose Farm, St. Charles, Illinois.

AWARDS.

JUDGE..................GEO. M. ROMMEL, Washington, D. C.

Stallion Four Years Old or Over—First, Dart, 5130, Morgan Horse Farm; second, Melrose, Wild Rose Farm; third, Morgan Panic, 5003, P. F. Smith; fourth, Joseph Huse, 5594, J. E. Bailey; fifth, Doctor B, 6607, J. E. Bailey.

Stallion Three Years, Under Four—First, Allen F, 5722, Jos. C. Brunk; second, Daniel Hudson, 5762, Morgan Horse Farm; third, Roseland, Wild Rose Farm.

Stallion Two Years, Under Three—First, Rosemont, Wild Rose Farm; second, Major Gans, Vol. III, Morgan Horse Farm; third, Red Ethan, 6239, Jos. C. Brunk; fourth, Muster, 6579, P. F. Smith.

Stallion Over One, Under Two—First, Montgomery, Vol. III, Morgan Horse Farm; second, Ned Scaif, 6497, Morgan Horse Farm; third, Prime O, 6590, P. F. Smith.

Stallion or Mare Foal—First, Sentiment, Jos. C. Brunk; second, Topsy, P. F. Smith; third, Fenlyn, H. C. Davis.

Mare Four Years or Over—First, Senata, Vol. II, Jos. C. Brunk; second, Lady Windemere, O. J. Mooers; third, Bessie Morgan, Wild Rose Farm; fourth, Queen of Spades, Wild Rose Farm; fifth, Queen of Clubs, Wild Rose Farm.

Mare Over Three, Under Four—First, Rosary, Wild Rose Farm; second, Betty Stark, Vol. III, Jos. C. Brunk; third, Midget, P. F. Smith.

Filly Over Two, Under Three—First, Primrose, Wild Rose Farm; second, Senora, Vol. III, Jos. C. Brunk; third, Myrtle Kingsley, Vol. III, E. Kingsley; fourth, Florence Baker, Vol. III, J. B. Baker; fifth, Ruth May Reade, Thos. Bass.

Filly Over One, Under Two—First, Bessie Baker, J. B. Baker; second, Maude Baker, Vol. III, J. B. Baker; third, Topsy Watkins, E. Kingsley; fourth, Panic's Daisy, P. F. Smith.

Champion Stallion—First, Allen F, 5722, Jos. C. Brunk; second, Rosemont, Wild Rose Farm.

Champion Mare—First, Rosary, Wild Rose Farm; second, Senata, Jos. C. Brunk.

Get of Stallion—First, Wild Rose Farm; second, Morgan Horse Farm; third, P. F. Smith.

Grand Display—First, Wild Rose Farm; second, Jos. C. Brunk; third, Morgan Horse Farm; fourth, P. F. Smith.

HACKNEY.

EXHIBITORS.

A. L. Champlin, Ames, Iowa; Crawford & Griffin, Newton, Iowa; Henry Lefebure, Fairfax, Iowa; J. Leitch & Sons, LaFayette, Illinois; O. J. Mooers, Columbia, Missouri; Truman's Pioneer Stud Farm, Bushnell, Illinois.

AWARDS.

JUDGE....................ALEX GALBRAITH, DeKalb, Illinois.

Stallion Four Years or Over—First, Tollington, Truman's Pioneer Stud Farm; second, Neptune, 632, Crawford & Griffin; third, Terrington Warrior, J. Leitch & Sons; fourth, Prince Greenfield, 1347, A. L. Champlin.

Stallion Over One, Under Two—First, Lunderstone William, Crawford & Griffin.

Stallion or Mare Foal—First, Molly, H. Lefebure.

Mare Four Years or Over—First, Nene Lady Gay, Truman's Pioneer Stud Farm; second, Wood Molly, H. Lefebure; third, Ardimersay Lottery, A. L. Champlin; fourth, Fair Eliza, 19061, A. L. Champlin.

Brood Mare with Foal at Side—First, Wood Molly, H. Lefebure.

Champion Stallion—First, Tollington, Truman's Pioneer Stud Farm; second, Lunderstone William, Crawford and Griffin.

Champion Mare—First, Nene Lady Gay, (19390), Truman's Pioneer Stud Farm; second, Wood Molly, 19965, H. Lefebure.

WELSH PONIES.

EXHIBITORS.

Geo. E. Brown, Aurora, Illinois; Geo. A. Heyl, Washington, Illinois.

AWARDS.

JUDGE..........................W. A. DOBSON, Des Moines.

Stallion Three Years or Over—First, Llewyn King, 424, Geo. A. Heyl; second, Tip Top, 210, Geo. E. Brown; third, Gold Dust, 198, Geo. E. Brown.

Stallion Two Years, Under Three—First, Llewyn Emperor, Geo. E. Brown.

Mare Three Years or Over—First, Sweet Marie, 76, Geo. A. Heyl; second, Llewyn Scepter 2d, Geo. A. Heyl; third, Foregate Polly, 429, Geo. A. Heyl.

Mare Two Years, Under Three—First, Llewyn Bracelet, 428, Geo. A. Heyl; second, Beauty of Wales 2d, 367, Geo. E. Brown; third, Thistle II, 365, Geo. E. Brown.

Pony in Harness—First, Geo. A. Heyl; second and third, Geo. E. Brown.

Pair Ponies in Harness—First and second, Geo. A. Heyl; third, Geo. E. Brown.

Tandem Team—First, Geo. A. Heyl; second, Geo. E. Brown; third, Geo. A. Heyl.

Pony under Saddle—First, second and third, Geo. A. Heyl.

SHETLAND PONIES.

EXHIBITORS.

Chas. Bachman, Des Moines, Iowa; H. C. Davis, Ames, Iowa; Jno. Donhowe, Story City, Iowa; Geo. A. Heyl, Washington, Iowa; H. W. Littleton, Harlan, Iowa; Wilmoth C. Mack, Des Moines, Iowa; W. T. Roberts & Son, Ames, Iowa; Carl A. Rosenfeld, Kelley, Iowa; Mrs. Adam Stirling, Des Moines, Iowa; Chas. H. Stone, Muscatine, Iowa; J. C. Thompson & Son, Jamaica, Iowa; F. R. Wilson, Colo, Iowa.

AWARDS.

JUDGE........................W. J. KENNEDY, Ames, Iowa

Stallion Four Years or Over—First, King Larigo, 8776, Geo. A. Heyl; second, Anton, 4342, Jno. Donhowe; third, Wagga Wagga, 8847, Mrs. Adam Stirling; fourth, Heather Bouy, 9572, H. C. Davis.

Stallion Three Years, Under Four—Dermot, Jno. Donhowe; second, Silver Tips II, Geo. A. Heyl.

Stallion Two Years, Under Three—First, Silver B., 11533, H. C. Davis; second, Neil, 11585, Mrs. Adam Stirling; third, McHarum, 11801, Geo. A. Heyl; fourth, Baron May, 11715, H. W. Littleton.

Stallion Over One, Under Two—First, Casey Jones, Geo. A. Heyl; second, Quickse, 12123, Mrs. Adam Stirling; third, Chelsie, H. C. Davis; fourth, Patsey, 12124, Mrs. Adam Stirling.

Stallion or Mare Foal—First, Scamper, W. T. Roberts; second, Peter M., Jno. Donhowe; third, H. C. Davis; fourth, Lady Bess, Wilmoth C. Mack.

Mare Four Years or Over—First, Cherie 6th, 11934, Mrs. Adam Stirling; second, Pearl, 8779, Geo. A. Heyl; third, Beauty Spot, Jno. Donhowe; fourth, Clara 2d, 11935, Mrs. Adam Stirling; fifth, Iola, J. C. Thompson & Son.

Mare Three Years, Under Four—First, Fernweed, 10545, Mrs. Adam Stirling; second, Phoebe B., 10549, Geo. A. Heyl; third, Pricilla, 12805, Geo. A. Heyl; fourth, Farry L., 10141, W. T. Roberts & Son; fifth, Neva, J. C. Thompson & Sons.

Mare Over Two, Under Three—First, "Tutsy," Jno. Donhowe; second, Princess Larigo, 12805, Geo. A. Heyl; third, Zanella, H. W. Littleton; fourth, Bess, H. C. Davis; fifth, Miss Printis, Chas. H. Stone.

Mare Over One, Under Two—First, Clamatis S., 12114, Mrs. Adam Stirling; second, Stella May, 12120, Mrs. Adam Stirling; third, Nina, J. C. Thompson & Son; fourth, Jessie, H. W. Littleton; fifth, Selma R., 12035, W. T. Roberts & Son.

Pony in Harness—First, Geo. A. Heyl; second, Anton, 4342, Jno. Donhowe; third, H. C. Davis; fourth, Geo. A. Heyl.

Pair Ponies in Harness—First, Geo. A. Heyl; second, Jno. Donhowe; third, Chas. Bachman; fourth, H. C. Davis.

Four in Hand—First, Geo. A. Heyl; second, Mrs. Adam Stirling; third, Jno. Donhowe; fourth, H. C. Davis.

Tandem Team—First, Geo. A. Heyl; second and fourth, Jno. Donhowe; third, Mrs. Adam Stirling; fifth, W. T. Roberts & Son.

Pony Under Saddle—First, Jno. Donhowe; second and fourth, Chas. Bachman; third, Geo. A. Heyl; fifth, Mrs. Adam Stirling.

Four Colts, Get of One Sire—First, Geo. A. Heyl; second, Jno. Donhowe; third, Mrs. Adam Stirling; fourth, J. C. Thompson & Son.

Champion Stallion, Mare or Gelding in Harness—First, King Larigo, Geo. A. Heyl; second, Anton, Jno. Donhowe.

Grand Display—First, Geo. A. Heyl; second, Jno. Donhowe; third, J. C. Thompson & Son; fourth, H. C. Davis.

Pony in Harness (Local)—First, Anton, Jno. Donhowe; second, Aldine, H. C. Davis; third, Clara 2d, Mrs. Adam Stirling; fourth, Jester, 5735, W. T. Roberts & Son.

Pair Ponies in Harness—First, Jno. Donhowe; second, Chas. Bachman; third, H. C. Davis; fourth, Mrs. Adam Stirling.

Pony Under Saddle—First, Beauty Spot, Jno. Donhowe; second, Prince, Chas. Bachman; third, Dimple, Chas. Bachman; fourth, Clara 2d, Mrs. Adam Stirling; fifth, H. C. Davis.

PONIES OTHER THAN SHETLAND OR WELSH.

EXHIBITORS.

H. C. Davis, Ames, Iowa; Geo. A. Heyl, Washington, Ill.; H. W. Littleton, Harlan, Iowa; W. T. Roberts & Son, Ames, Iowa; Mrs. Adam Stirling, Des Moines, Iowa; Chas. H. Stone, Muscatine, Iowa; J. C. Thompson & Son, Jamaica, Iowa; Truman's Pioneer Stud Farm, Bushnell, Ill.; Jas. Walcott, Monroe, Iowa; Wild Rose Farm, St. Charles, Ill.; F. R. Wilson, Colo, Iowa.

AWARDS.

JUDGE.....................W. A. DOBSON, Des Moines, Iowa.

Pony in Harness—First, Geo. A. Heyl; second, Geo. A. Heyl; third, Roxie, H. W. Littleton; fourth, H. C. Davis.

Pony Under Saddle—First, H. C. Davis; second, Roxie, H. W. Littleton; third, H. C. Davis; fourth, Lady May, Mrs. Adam Stirling.

Pair Ponies in Harness—First, Geo. A. Heyl; second and fourth, H. C. Davis; third, J. C. Thompson & Son.

Tandem Team—First, Geo. A. Heyl; second and fourth, H. C. Davis; third, H. W. Littleton.

Four in Hand—First, H. C. Davis.

MULES.

EXHIBITORS.

Loren Dunbar, Earlham, Iowa; A. L. Foster, Winterset, Iowa; N. A. Gladieux, Chillicothe, Mo.; F. L. Hutson & Son, State Center, Iowa; W. E. Kingdon, Prairie City, Iowa; John McCoy, Jamaica, Iowa; A. L. Russell, Jamaica, Iowa.

AWARDS.

JUDGE....................W. A. DOBSON, Des Moines, Iowa.

Mules Four Years or Over—First, Snowball, F. L. Hutson & Son; second, Mabel, F. L. Hutson & Son; third, Maude, Jno. McCoy.

Mule Over Three, Under Four—First, Pet, W. E. Kingdon; second, Maude, W. E. Kingdon.

Mule Over Two, Under Three—First, Ruth, F. L. Hutson & Son.

Mule Over One, Under Two—First, Iowa Queen, F. L. Hutson & Son; second, Daisy, F. L. Hutson & Son.

Mine Mules Under Fifteen Hands—First, Bird, A. L. Foster; second, Bell, A. L. Foster.

Pair of Mules Over 2400 Pounds—First, F. L. Hutson & Son; second, A. L. Russell; third, F. L. Hutson & Son.

Pair Mules Under 2400 Pounds—First, A. L. Foster.

Pair Mules Any Age or Weight—First and third, F. L. Hutson & Son; second, A. L. Russell.

Five Mules Any Age—First, F. L. Hutson & Son.

Champion Mule Any Age—First, Snowball, F. L. Hutson & Son; second, Ruth, F. L. Hutson & Son.

JACKS.

EXHIBITORS.

Dierling & Otto, Queen City, Mo.

AWARDS.

JUDGE....................W. A. DOBSON, Des Moines, Iowa.

Jack Three Years and Over—First, Pride of Missouri.

Jack Two Years and Under Three—First, Fenn Paymaster.

Five Jacks—First.

CATTLE DEPARTMENT.

SUPERINTENDENT..................H. L. PIKE, Whiting, Iowa

SHORT-HORNS.

EXHIBITORS.

Anoka Farms, Waukesha, Wis.; Bellows Bros., Maryville, Mo.; G. H. Burge, Mt. Vernon, Iowa; F. T. Ehlers, Tama, Iowa; Philip Funke, Greenfield, Iowa; W. E. Graham, Prairie City, Iowa; Wm. Herkelmann, Elwood, Iowa; W. A. Johnston, Prairie City, Iowa; C. L. McClellan, Lowden, Iowa; H. G. McMillan & Son, Rock Rapids, Iowa;

Theo. Martin, Bellevue, Iowa; J. H. Miller, Peru, Ind.; C. S. Nevius, Chiles, Kan.; L. C. Oloff, Ireton, Iowa; H. H. Powell & Son, Linn Grove, Iowa; Rapp Bros., St. Edward, Nebr.; Rookwood Farm, Ames, Iowa; C. A. Saunders, Manilla, Iowa; Geo. J. Sayer, McHenry, Ill.; Wm. M. Smith & Sons, West Branch, Iowa; E. B. Thomas, Audubon, Iowa; D. Teitjen, Bellevue, Iowa; Geo. M. Vader, Churdan, Iowa; W. W. Vaughn, Marion, Iowa; R. E. Watts & Son, Miles, Iowa; White & Smith, St. Cloud, Minn.; W. A. Wickersham, Melbourne, Iowa.

AWARDS.

JUDGE........................A. J. RYDEN, Abingdon, Ill.

Bull Three Years Old or Over—First, Diamond Goods, 333014, Bellows Bros.; second, White Star, 338500, Geo. J. Sayer; third, Scotch Avon, 315678, R. E. Watts & Sons; fourth, Monarch Viceroy, 264469, Theo. Martin; fifth, Proud Robin, 323815, W. A. Wickersham; sixth, Ringmaster, 299782, Geo. M. Vader.

Bull Two Years and Under Three—First, Sultan Stamp, 334974, Anoka Farms; second, Count Avon 334946, Rookwood Farm; third, King Cumberland 2d, 352076, H. H. Powell & Son; fourth, Corrector, 334788, D. Teitjen; fifth, Fair Knight II, 350285, H. G. McMillan & Sons; sixth, Foxy Favorite, 336713, Rapp Bros.; seventh, Scottish Lord, 254738, Wm. M. Smith & Sons.

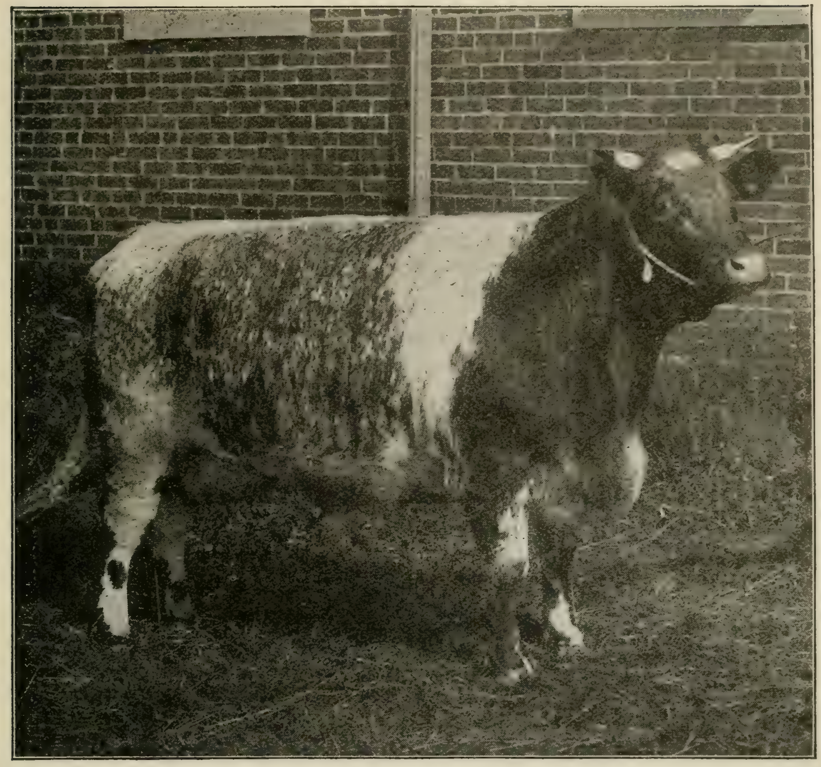
Senior Yearling Bull—First, Gloster Fashion, 250512, Anoka Farms; second, Silver Sultan, 353640, G. H. Burge; third, Gay Lord, 346618, H. G. McMillan & Son; fourth, Major, 351957, D. Teitjen; fifth, Grand Master, 352173, Rapp Bros.; sixth, Lavendar King, 353118, Philip Funke; seventh, The Governor, 351958, D. Teitjen.

Junior Yearling Bull—First, Bandmaster, 359285, H. G. McMillan & Son; second, Red Marshall 2d, R. E. Watts & Son; third, Village Pride, 352176, Rapp Bros.; fourth, True Cumberland 3d, Wm. Herkelmann; fifth, Diamond Gloster, 355961, Theo. Martin; sixth, Red Robin, W. A. Wickersham; seventh, Missie's Prince, 365699, Wm. Herkelmann.

Senior Bull Calf—First, Gloster Mine, Anoka Farms; second, Cumberland's Pride, H. H. Powell & Son; third, Good Fashion, Anoka Farms; fourth, Pride of Elmlawn, 367021, L. C. Oloff; fifth, Proud Lad, Rapp Bros.; sixth, Hill Crest Excelsior, 363803, D. Teitjen; seventh, Linwood Cumberland, H. H. Powell & Son.

Junior Bull Calf—First, Village Cumberland, C. A. Saunders; second, Scotch Goods, 365464, W. E. Graham; third, Clipper Stamp, Anoka Farms; fourth, March Premier, H. G. McMillan & Son; fifth, Hill Crest Spangle, 363805, D. Teitjen; sixth, Monarch's Fashion, 367087, Theo. Martin; seventh, Fairview Sultan, F. H. Ehlers.

Cow Three Years or Over—First, Fair Start 2d, 68802, Geo. J. Sayer; second, New Year's Delight, 59502, J. H. Miller; third, Columbia 10th, 62022, H. G. McMillan & Son; fourth, Florella, Vol. 68, G. H. Burge; fifth, Sassy Violet 3d, 59495, Wm. Herkelmann; sixth, Sally Morton, Vol. 65, D. Teitjen; seventh, Fairy Queen, 86250, F. H. Ehlers.



FIRST TWO-YEAR-OLD SHORTHORN HEIFER
Iowa State Fair, 1912

Heifer Two Years and Under Three—First, Mary Ann of Oakland 2d, 86840, Geo. J. Sayer; second, Queen Mildred, 92788, Geo. J. Sayer; third, Sultan's Aconite, 86627, Anoka Farms; fourth, Marshall's Missie, 86337, D. Teitjen; fifth, Bonnie Cumberland 2d, 86363, Wm. Herkelmann; sixth, Choice Gloster II, 101044, H. G. McMillan & Son; seventh, Dora Malaka, 101375, F. H. Ehlers.

Senior Yearling Heifer—First, Mildred of Oakland, 106370, Geo. J. Sayer; second, Orange Choice, 108741, F. H. Ehlers; third, Mayflower IV, 101855, H. G. McMillan & Son; fourth, Lady Violet 5th, 109096, Wm. Herkelmann; fifth, Florence, 108731, F. H. Ehlers; sixth, Orange Flower 2d, 115756, G. H. Burge.

Junior Yearling Heifer—First, 78th Duchess of Gloster, 112340, Geo. J. Sayer; second, Touch Me Not, 107940, C. A. Saunders; third, Her Excellence, 106079, D. Teitjen; fourth, Village Rose 2d, Anoka Farms; fifth, Martha 2d, Rapp Bros.; sixth, Hill Krest Queen, 106080, D. Teitjen; seventh, May's Lady, 118578, Rapp Bros.

Senior Heifer Calf—First, 79th Duchess of Gloster, C. A. Saunders; second, Sittyton Anna, 125327, Geo. J. Sayer; third, Spicy of Anoka, Anoka Farms; fourth, British Countess, 126927, Rookwood Farm; fifth, Bonnie Duchess, Rapp Bros.; sixth, Fancy Mine, Anoka Farms; seventh, Hurdsman Queen, Rapp Bros.

Junior Heifer Calf—First, Bonnie Cumberland 8th, C. A. Saunders; second, Hill Krest Lassie, 123300, D. Teitjen; third, Victoria of Wayside, G. H. Burge; fourth, Butterfly Sultana, 122283, H. G. McMillan & Son; fifth, Missie 3d, 125641, Wm. Herkelmann; sixth, Countess Victoria, 125640, Wm. Herkelmann; seventh, Elmlawn Lassie, 127011, L. C. Oloff,

Senior Champion Bull—Diamond Goods, 333014, Bellows Bros.

Junior Champion Bull—Gloster Fashion, 350512, Anoka Farms.

Senior Champion Cow—Fair Start 2d, 68802, Geo. J. Sayer.

Junior Champion Cow—78th Duchess of Gloster, 112340, Geo. J. Sayer.

Grand Champion Bull—Diamond Goods, 333014, Bellows Bros.

Grand Champion Cow—Fair Start 2d, 68802, Geo. J. Sayer.

Exhibitor's Herd—First, Geo. J. Sayer; second, Anoka Farms; third, D. Teitjen; fourth, H. C. McMillan & Son; fifth, Wm. Herkelmann; sixth, F. H. Ehlers.

Breeder's Young Herd—First, Anoka Farms; second, D. Teitjen; third, Rapp Bros.; fourth, G. H. Burge.

Calf Herd—First, Anoka Farms; second, C. A. Saunders; third, Rookwood Farm; fourth, D. Teitjen; fifth, Rapp Bros.; sixth, G. H. Burge.

Get of Sire—First, Geo. J. Sayer; second, Anoka Farms; third, Rapp Bros.; fourth, D. Teitjen; fifth, G. H. Burge; sixth, L. C. Oloff.

Produce of Cow—First, Anoka Farms; second, Geo. J. Sayer; third, D. Teitjen; fourth, G. H. Burge; fifth, Rapp Bros.; sixth, Wm. Herkelmann.

IOWA SHORT-HORN SPECIALS.

Bull Three Years or Over—First, Scotch Avon, 315678, R. E. Watts & Son; second, Monarch Viceroy, 264469, Theo. Martin; third, Proud Robin, 323815, W. A. Wickersham; fourth, Ringmaster, 299782, Geo. M. Vader.

Bull Two Years, Under Three—First, Count Avon, 334946, Rookwood Farms; second, King Cumberland 2d, 352076, H. H. Powell & Son; third, Corrector, 334788, D. Teitjen; fourth, Fair Knight II, 350285, H. G. McMillan & Sons; fifth, Scottish Lord, 254738, Wm. M. Smith & Sons; sixth, Comet, 357582, W. W. Vaughn; seventh, Count Rosemary 2d, 354737, Wm. M. Smith & Sons.

Senior Yearling Bull—First, Silver Sultan, 353640, G. H. Burge; second, Gay Lord, 346618, H. G. McMillan & Sons; third, Major, 351957, D. Teitjen; fourth, Lavendar King, 353118, Philip Funke; fifth, The Governor, 351958, D. Teitjen; sixth, Knight of Elanwood, 353970, E. B. Thomas; seventh, Lancaster Sultan, 359097, F. H. Ehlers.

Junior Yearling Bull—First, Bandmaster, 359285, H. G. McMillan & Sons; second, Red Marshall 2d, R. E. Watts & Son; third, True Cumberland 3d, 353220, Wm. Herkelmann; fourth, Diamond Gloster, 355961, Theo. Martin; fifth, Red Robin, W. A. Wickersham; sixth, Missie's Prince, 365699, Wm. Herkelmann; seventh, Sultan of Wayside, G. H. Burge.

Senior Bull Calf—First, Cumberland's Pride, H. H. Powell & Son; second, Pride of Elmlawn, 367021, L. C. Oloff; third, Hill Krest Excelsior, 363803, D. Teitjen; fourth, Linwood Cumberland, H. H. Powell & Son; fifth, Gloster Sultan, 362829, H. G. McMillan & Sons; sixth, Old Business, G. H. Burge; seventh, Golden Hampton, 365697, Wm. Herkelmann.

Junior Bull Calf—First, Village Cumberland, C. A. Saunders; second, Scotch Goods, 365464, W. E. Graham; third, March Premier, H. G. McMillan & Sons; fourth, Hill Krest Spangle, 363805, D. Teitjen; fifth, Monarch's Fashion, 357087, Theo. Martin; sixth, Fairview Sultan, F. H. Ehlers; seventh, Missie's Pride, 365698, Wm. Herkelmann.

Cow Three Years or Over—First, Columbia 10th, 62022, H. G. McMillan & Sons; second, Florella, Vol. 68, G. H. Burge; third, Sassy Violet 3d, 59495, Wm. Herkelmann; fourth, Sally Morton, Vol. 65, D. Teitjen; fifth, Fairy Queen, 86250, F. H. Ehlers; sixth, Honey Creek Foxglove, W. W. Vaughn.

Heifer Two Years, Under Three—First, Marshall's Missie, 86337, D. Teitjen; second, Bonnie Cumberland 2d, 86363, Wm. Herkelmann; third, Choice Gloster II, 101044, H. C. McMillan & Son; fourth, Dora Malaka, 101375, F. H. Ehlers.

Senior Yearling Heifer—First, Orange Choice, 108741, F. H. Ehlers; second, Mayflower IV, 101855, H. G. McMillan & Son; third, Lady Violet 5th, 109096, Wm. Herkelmann; fourth, Florence, 108731, F. H. Ehlers; fifth, Orange Flower 2d, 115756, G. H. Burge.

Junior Yearling Heifer—First, Touch Me Not, 107940, C. A. Saunders; second, Her Excellence, 106079, D. Teitjen; third, Hill Krest Queen, 106080, D. Teitjen; fourth, Sweet Fashion, 107866, Theo. Martin; fifth, Gipsy's Victoria, 126491, Wm. Herkelmann; sixth, Lucy, 111358, F. H. Ehlers; seventh, Scotch Goods, 365464, W. E. Graham.

Senior Heifer Calf—First, 79th Duchess of Gloster, C. A. Saunders; second, British Countess, 126927, Rookwood Farm; third, Hill Krest Belle, 123299, D. Teitjen; fourth, British Victoria 2d, Rookwood Farm; fifth, Miss Lavendar 3d, 127058, Philip Funke; sixth, Scotch Diamond, W. A. Wickersham; seventh, Miss Missie, 124891, W. E. Graham.

Junior Heifer Calf—First, Bonnie Cumberland 8th, C. A. Saunders; second, Hill Krest Lassie, 123300, D. Teitjen; third, Victoria of Wayside, G. H. Burge; fourth, Butterfly Sultana, 122283, H. G. McMillan & Sons; fifth, Missie 3d, 125641, Wm. Herkelmann; sixth, Countess Victoria, 125640, Wm. Herkelmann; seventh, Elmlawn Lassie, 127011, L. C. Oloff.

Senior Champion Bull—Count Avon, 334946, Rookwood Farms.

Junior Champion Bull—Silver Sultan, 353640, G. H. Burge.

Senior Champion Cow—Marshall's Missie, 86337, D. Teitjen.

Junior Champion Cow—79th Duchess of Gloster, C. A. Saunders.

Grand Champion Bull—Count Avon, 334946, Rookwood Farms.

Grand Champion Cow—Marshall's Missie, 86337, D. Teitjen.

Exhibitor's Herd—First, D. Teitjen; second, H. G. McMillan & Son; third, Wm. Herkelmann; fourth, F. H. Ehlers.

Breeder's Young Herd—First, D. Teitjen; second, G. H. Burge.

Calf Herd—First, C. A. Saunders; second, Rookwood Farms; third, D. Teitjen; fourth, G. H. Burge; fifth, H. G. McMillan & Son.

Get of Sire—First, D. Teitjen; second, G. H. Burge; third, L. C. Oloc; fourth, Wm. Herkelmann; fifth, H. G. McMillan & Sons; sixth, Theo. Martin.

Produce of Cow—First, D. Teitjen; second, G. H. Burge; third, Wm. Herkelmann; fourth, Philip Funke; fifth, W. A. Wickersham; sixth, Wm. Herkelmann.

HEREFORDS.

EXHIBITORS.

J. B. Ashby, Audubon, Iowa; E. M. Cassady & Son, Whiting, Iowa; J. P. Cudahy, Belton, Mo.; O. S. Gibbons & Son, Atlantic, Iowa; Hahn & Mayne, Harlan, Iowa; O. Harris, Harris, Mo.; Robt. H. Hazlitt, Eldorado, Kan.; Mrs. E. L. Karr, Osceola, Iowa; E. W. Kreischer, Mt. Vernon, Iowa; Warren T. McCray, Kentland, Ind.; B. F. Maiden & Son, Tama, Iowa; Cyrus A. Tow, Norway, Iowa; J. H. & Jno. W. Van Natta, LaFayette, Ind.

AWARDS.

JUDGE........................F. W. VAN NATTA, *Fowler, Ind.*

Bull Three Years or Over—First, Fairfax 16th, 316931, J. P. Cudahy; second, Standard, 325950, Cyrus A. Tow; third, Tippecanoe, 294100, J. H. & Jno. W. Van Natta; fourth, Beau Sturgess 2d, 316605, Robt. H. Hazlitt; fifth, Donald Rex D., 270986, Warren T. McCray; sixth, General G., 261924, O. S. Gibbons & Son; seventh, Young Albany, 290216, E. W. Kreischer.

Bull Two Years and Under Three—First, Prince Perfection, 342054, O. Harris; second, Corrector Fairfax, 332653, J. P. Cudahy; third, Donald Lad 7th, 348415, O. Harris; fourth, Byron Fairfax, 344282, Warren T. McCray; fifth, Good Lad, 343996, O. S. Gibbons & Son; sixth, Perfect Fairfax, 332660, Warren T. McCray.

Senior Yearling Bull—First, Graceful Lad 3d, 367678, J. H. & Jno. W. Van Natta; second, Bonnie Lad 26th, 367112, Robt. H. Hazlitt; third, Carnot, 364246, O. S. Gibbons & Son; fourth, Protector Fairfax, 361812, Warren T. McCray; fifth, Beau Perfection 9th, 368012, Hahn & Mayne; sixth, Beau Protector, 363733, Mrs. E. L. Karr.

Junior Yearling Bull—First, Prize Winner, 373717, O. Harris; second, Beau Fairfax, 368360, J. P. Cudahy; third, Diamond Donald, 367648, J. H. & Jno. W. Van Natta; fourth, Perfection Jr., 373642, Cyrus A. Tow; fifth, Bocaldo, 362186, Robt. H. Hazlitt; sixth, Panama Gay Lad, 365249, O. Harris; seventh, Beau Patrick, 370338, O. S. Gibbons & Son.

Senior Bull Calf—First, Repeater 7th, 386905, O. Harris; second, Dismora 3d, 388740, Cyrus A. Tow; third, Tippecanoe 3d, 390011, J. H. & Jno. W. Van Natta; fourth, Beau Baltimore, 388453, Robt. H. Hazlitt; fifth, Gay Lad 9th, 386873, O. Harris; sixth, Golden Lad, 381477, E. M. Cassady; seventh, Teddy Fairfax, 388834, Warren T. McCray.

Junior Bull Calf—First, Duke Real, 388816, Warren T. McCray; second, Consumation, 388812, Warren T. McCray; third, Gay Lad 12th, 395804, O. Harris; fourth, Fairview Prince, 388031, Cyrus A. Tow; fifth, Beau General 6th, 391948, O. S. Gibbons & Son; sixth, Goldbeater, 396757, J. P. Cudahy; seventh, Claremont Pride, 397581, J. B. Ashby.

Cow Three Years or Over—First, Scottish Lassie, 304352, J. P. Cudahy; second, Prime Lady 2d, 324661; J. H. & Jno. W. Van Natta; third, Gay Lass 5th, 316953, Warren T. McCray; fourth, Princess 16th, 288350, O. Harris; fifth, Lady Fairfax 4th, 265180, Warren T. McCray; sixth, British Ornament, 325280, Cyrus A. Tow; seventh, Disturber's Queen 2d, 325351, Cyrus A. Tow.

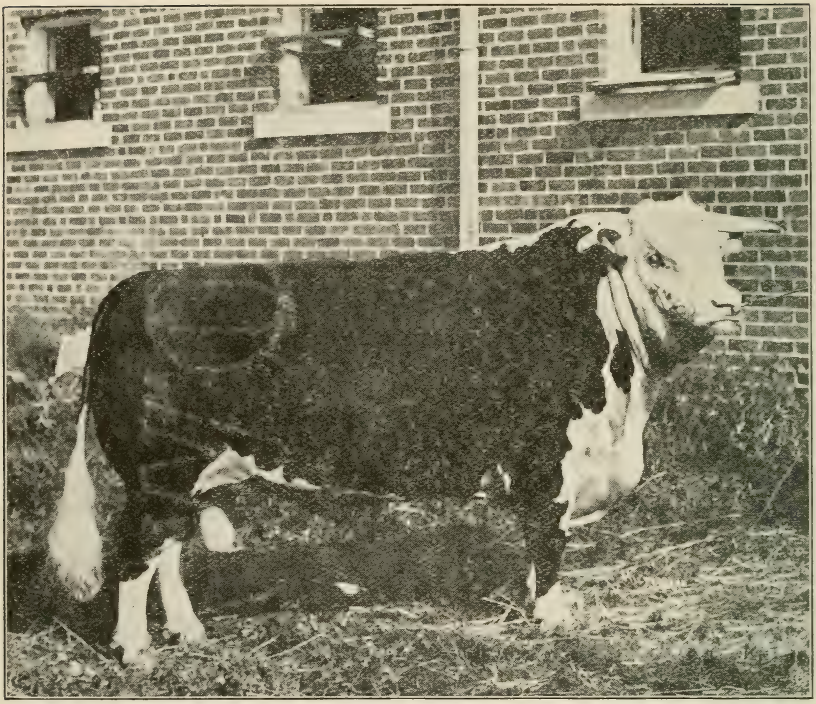
Heifer Two Years and Under Three—First, Perfection Lass, 342053, J. P. Cudahy; second, Disturber's Lassie 4th, 349146, Cyrus A. Tow; third, Amy Folly, 338594, J. H. & Jno. W. Van Natta; fourth, Nora Fairfax, 344290, Warren T. McCray; fifth, Mary Maid, 344952, J. H. & Jno. W. Van Natta; fifth, Bloss 4th, 351117, Robt. H. Hazlitt; seventh, Miss Ruth, 341216, Warren T. McCray.

Senior Yearling Heifer—First, Donald Lass 9th, 370534, Warren T. McCray; second, Princess Repeater, 359355, O. Harris; third, Harris Princess, 215th, 359358, O. Harris; fourth, Pansy Belle 4th, 364248, O. S. Gibbons & Son; fifth, Daisy 4th, 371607, Hahn & Mayne; sixth, Melzah, 362204, Robt. H. Hazlitt; seventh, Faith 3d, 371609, Cyrus A. Tow.

Junior Yearling Heifer—First, Celandine 2d, 371605, J. P. Cudahy; second, Miss Peerless Fairfax, 369685, Warren T. McCray; third, Folly Bird, 367650, J. H. & Jno. W. Van Natta; fourth, Tippecanoe Lass, 367665, J. H. & Jno. W. Van Natta; fifth, Princess Repeater 3d, 365253, O. Harris; sixth, Bonnie Lass 18th, 367119, Hahn & Mayne; seventh, Idylette, 362200, Robt. H. Hazlitt.

Senior Heifer Calf—First, Pearl Donald, 396760, J. P. Cudahy; second, Miss Gay Lad 7th, 386871, O. Harris; third, Finella Canoe, 390003, J. H. & Jno. W. Van Natta; fourth, Mauzelle, 388478, Robt. H. Hazlitt; fifth, Joan Fairfax, 388823, Warren T. McCray; sixth, Miss Gay Lad 6th, 386896, O. Harris; seventh, Beauty, 388252, E. M. Cassady & Son.

Junior Heifer Calf—First, Miss Repeater 11th, 395824, O. Harris; second, Gertrude Fairfax, 388822, Warren T. McCray; third, Anita Donald, 397698, J. P. Cudahy; fourth, Lenora 2d, 388032, Cyrus A. Tow;



GRAND CHAMPION HEREFORD BULL
Iowa State Fair, 1912

fifth, Miss Armour Donald, 388829, Warren T. McCray; sixth, Claremont Pet, 397584, J. B. Ashby; seventh, Lady Rex, 394708, J. H. & Jno. W. Van Natta.

Senior Champion Bull—Fairfax 16th, 316931, J. P. Cudahy.

Junior Champion Bull—Repeater 7th, 386905, O. Harris.

Senior Champion Cow—Scottish Lassie, 305352, J. P. Cudahy.

Junior Champion Cow—Miss Repeater 11th, 395824, O. Harris.

Grand Champion Bull—Fairfax 16th, 316931, J. P. Cudahy.

Grand Champion Cow—Scottish Lassie, 305352, J. P. Cudahy.

Exhibitor's Herd—First, J. P. Cudahy; second, J. H. & Jno. W. Van Natta; third, O. Harris; fourth, Warren T. McCray; fifth, Cyrus A. Tow; sixth, Warren T. McCray; seventh, O. S. Gibbons & Son.

Breeder's Young Herd—First, O. Harris; second, J. H. & Jno. W. Van Natta; third, Warren T. McCray; fourth, J. P. Cudahy; fifth, Robt. H. Hazlitt.

Calf Herd—First, O. Harris; second, J. H. & Jno. W. Van Natta; third, Robt. H. Hazlitt; fourth, Warren T. McCray; fifth, J. P. Cudahy; sixth, E. M. Cassady & Sons; seventh, Warren T. McCray.

Get of Sire—First, J. P. Cudahy; second, Warren T. McCray; third, J. H. & Jno. W. Van Natta; fourth, O. Harris; fifth, Cyrus A Tow; sixth, J. H. & Jno. W. Van Natta; seventh, Robt. H. Hazlitt.

Produce of Cow—First, Warren T. McCray; second, Warren T. McCray; third, Cyrus A. Tow; fourth, O. S. Gibbons & Son; fifth and sixth, O. S. Gibbons & Son.

IOWA HEREFORD SPECIALS.

Bull Three Years or Over—First, Standard, 325950, Cyrus A. Tow; second, General G., 261924, O. S. Gibbons & Son; third, Young Albany, 290216, E. W. Kreischer.

Bull Two Years and Under Three—First, Good Lad, 343996, O. S. Gibbons & Son.

Senior Yearling Bull—First, Carnot, 364246, O. S. Gibbons & Son; second, Beau Perfection 9th, 368012, Hahn & Mayne; third, Beau Protector, 363733, Mrs. E. L. Karr.

Junior Yearling Bull—First, Perfection Jr., 373642, Cyrus A. Tow; second, Beau Patrick, O. S. Gibbons & Son; third, Defender 2d, 373336, E. M. Cassady & Son; fourth Parole, 371617, Hahn & Mayne; fifth, Young Premier, 380799, Hahn & Mayne.

Senior Bull Calf—First, Dismora 3d, 388740, Cyrus A. Tow; second, Golden Lad, 381477, E. M. Cassady & Son; third, Standard 4th, 382208, E. W. Kreischer; fourth, Beau General 4th, 386450, O. S. Gibbons & Son.

Junior Bull Calf—First, Fairview Prince, 388031, Cyrus A. Tow; second, Beau General 6th, 391948, O. S. Gibbons & Son; third, Clairmont Pride, 397581, J. B. Ashby.

Cow Three Years Old or Over—First, British Ornament, 325280, Cyrus A. Tow; second, Disturber Queen 2d, 325351, Cyrus A. Tow; third, Priscilla, 204713, O. S. Gibbons & Son; fourth, Diamond's Maid 2d, 320887, E. W. Kreischer.

Heifer Two Years and Under Three—First, Disturber's Lassie 4th, 349146, Cyrus A. Tow; second, Moonbeam, 348407, E. W. Kreischer; third, Lady Viola, 349149, O. S. Gibbons & Son; fourth, Carnette, 340292, O. S. Gibbons & Son.

Senior Yearling Heifer—First, Pansy Belle 4th, 364248, O. S. Gibbons & Son; second, Daisy 4th, Hahn & Mayne; third, Faith 3d, 371609, Cyrus A. Tow; fourth, Fairview Silky, 364581, Cyrus A. Tow; fifth, Lady Amber, 364837, E. W. Kreischer.

Junior Yearling Heifer—First, Bonnie Lass 18th, Hahn & Mayne; second, Lassie, 372645, O. S. Gibbons & Son; third, Disturber's Lassie 5th, 369627, Cyrus A. Tow; fourth, Miss Creamy, 369631, Cyrus A. Tow.

Senior Heifer Calf—First, Beauty, 388252, E. M. Cassady & Son; second, Disturber's Lassie 6th, 388029, Cyrus A. Tow; third, Lady General, 386447, O. S. Gibbons & Son; fourth, Donna Valentine, 381475, E. M. Cassady & Son; fifth, Miss Randolph, 397091, E. W. Kreischer.

Junior Heifer Calf—First, Lenora 2d, 388032, Cyrus A. Tow; second, Claremont Pet, 397584, J. B. Ashby; third, Arthur's Lady, 388251, E. M. Cassady & Son; fourth, Priscilline, 391950, O. S. Gibbons & Son; fifth, Lad's Gertie, 397586, J. B. Ashby.

Senior Champion Bull—Good Lad, 343996, O. S. Gibbons & Son.

Junior Champion Bull—Perfection Jr., 373642, Cyrus A. Tow.

Senior Champion Cow—Disturber's Lassie 4th, 349146, Cyrus A. Tow.

Junior Champion Cow—Beauty, 388252, E. M. Cassady & Son.

Grand Champion Bull—Perfection Jr., 373642, Cyrus A. Tow.

Grand Champion Cow—Disturber's Lassie 4th, 349146, Cyrus A. Tow.

Exhibitor's Herd—First, Cyrus A. Tow; second, O. S. Gibbons & Son; third, E. W. Kreischer.

Calf Herd—First, E. M. Cassady & Son; second, O. S. Gibbons & Son; third, J. B. Ashby; fourth, E. W. Kreischer.

Get of Sire—First, Cyrus A. Tow; second and fourth, O. S. Gibbons & Son; third, E. M. Cassady & Son.

Produce of Cow—First, Cyrus A. Tow; second, third and fourth, O. S. Gibbons & Son.

ABERDEEN ANGUS.

EXHIBITORS.

R. M. Anderson & Son, Newell, Iowa; A. B. Atwater & Son, Robins, Iowa; A. C. Binnie, Alta, Iowa; Chas. Escher & Son, Botna, Iowa; W. A. McHenry, Denison, Iowa; W. J. Miller, Newton, Iowa; Carl A. Rosenfeld, Kelley, Iowa.

AWARDS.

JUDGE......................C. J. MARTIN, Jefferson, Iowa.

Bull Three Years or Over—First, Kloman, 135617, A. C. Binnie; second, Erwin C., 136625, W. A. McHenry; third, Ever Black, 117629, W. H. Miller; fourth, Enus, 139624, R. M. Anderson & Son.

Bull Two Years and Under Three—First, Black Pridewood, 137275, A. C. Binnie; second, Peter Pan of Alta, 140526, W. J. Miller; third, R. M. Anderson & Sons.

Senior Yearling Bull—First, Proud Thickset, W. A. McHenry; second, Rosegay 6th, W. J. Miller.

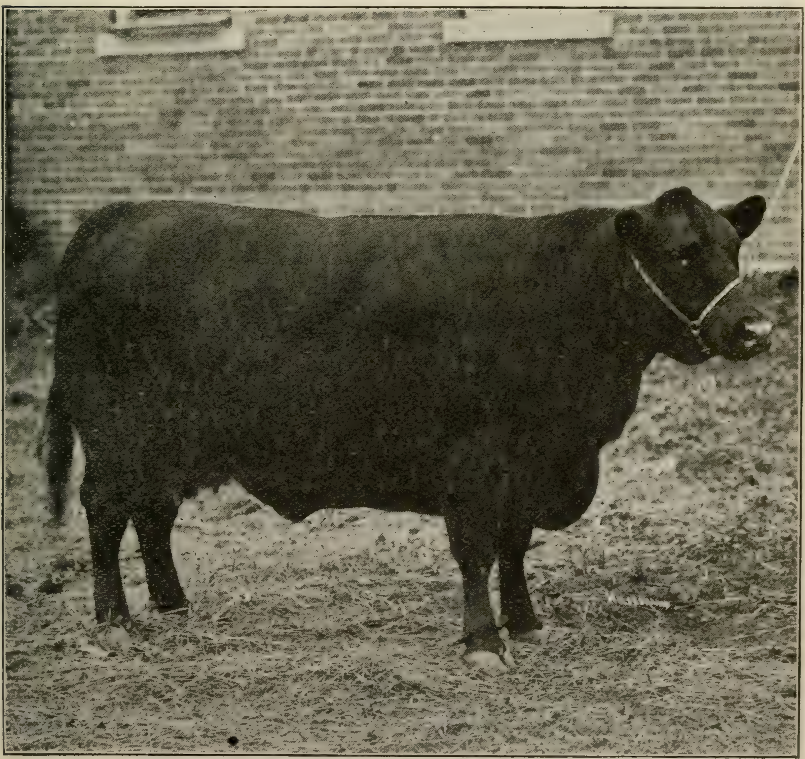
Junior Yearling Bull—First, Joubert, 150168; R. M. Anderson & Sons; second, Prince Felzer, 156700, Chas. Escher & Son; third, Enos 3d, 130053, R. M. Anderson & Son; fourth, Kris Kringle B., 150194, A. C. Binnie; fifth, Pride's Twain, 157761, W. J. Miller.

Senior Bull Calf—First, Bromo, 155560, Chas. Escher & Son; second, Provost, 150243, R. M. Anderson & Son; third, Quality Prince 2d, 158963, W. A. McHenry; fourth, Pride's Kloman, 152295, A. C. Binnie; fifth, Heather Keylex, 152752, W. J. Miller; sixth, Black Prince Rosegay, Carl A. Rosenfeld.

Junior Bull Calf—First, Eraman, A. C. Binnie; second, Everlex, W. J. Miller; third, Enos 4th, 150275, R. M. Anderson & Son.

Cow Three Years or Over—First, Barbara Woodson, 129611, W. J. Miller; second, Eileen of Alta, 129498, A. C. Binnie; third, Barbara McHenry 24th, 104144, W. A. McHenry; fourth, Key of Heather 2d, 139064, W. J. Miller; fifth, Bell Eclipser of Newell, 131046, R. M. Anderson & Sons; sixth, Pride of Elchies 12th, 116879, R. M. Anderson & Sons; seventh, Jilt 56th, 130577, R. M. Anderson & Son.

Heifer Two Years and Under Three—First, Black Cap McHenry 84th, 138378, W. A. McHenry; second, Black Cap McHenry 88th, 138394, W. A. McHenry; third, Abbess of Alta, 140517, A. C. Binnie; fourth, Pride of Black Stone 3d, 139639, R. M. Anderson & Son; fifth, Enchantress 8th, 135664, W. J. Miller; sixth, Proud Formera 2d, 137273, A. C. Binnie; seventh, Barbara Woodson 2d, 139901, W. J. Miller.



GRAND CHAMPION ANGUS COW
Iowa State Fair, 1912

Senior Yearling Heifer—First, Pride McHenry 97th, 149358, W. A. McHenry; second, Pride McHenry 100, 149362, W. A. McHenry; third, Metz Blackbird 8th, 149508, W. J. Miller; fourth, Key of Indianapolis 4th, 150048, R. M. Anderson & Son; fifth, Abbess of Alta 2d, 150179, A. C. Binnie; sixth, Blackbird Lassie of Alta 16th, 150182, A. C. Binnie.

Junior Yearling Heifer—First, Coquette McHenry 37, 149391, W. A. McHenry; second, Katy Key Mura 2d, 150410, W. J. Miller; third, Metz Beauty 11th, 151756, W. J. Miller; fourth, Pride of Elchies 20th, 150052, R. M. Anderson & Son.

Senior Heifer Calf—First, Pride McHenry 108th, 158956, W. A. McHenry; second, Pride McHenry 109th, 158958, W. A. McHenry; third, Miss Barbara, W. J. Miller; fourth, Blackbird Woodson, W. J. Miller; fifth, Krista Klo, A. C. Binnie; sixth, Key of Indianapolis 5th, 150642, R. M. Anderson & Son; seventh, Queen of the Dale, R. M. Anderson & Son; eighth, Blackbird Lassie of Alta 19th, A. C. Binnie.

Junior Heifer Calf—First, Blackcap of Alta 6th, A. C. Binnie; second, Erin's Pride 2d, W. J. Miller; third, Jilt, R. M. Anderson & Son; fourth, Pride of Elchies, R. M. Anderson & Son; fifth, Pride of Alta 20th, A. C. Binnie.

Senior Champion Bull—Kloman, 135617, A. C. Binnie.

Junior Champion Bull—Proud Thickset, W. A. McHenry.

Senior Champion Cow—Barbara Woodson, 129611, W. J. Miller.

Junior Champion Cow—Pride McHenry 97th, 194358, W. A. McHenry.

Grand Champion Bull—Kloman, 135617, A. C. Binnie.

Grand Champion Cow—Barbara Woodson, 129611, W. J. Miller.

Exhibitor's Herd—First, W. A. McHenry; second, A. C. Binnie; third, W. J. Miller; fourth, R. M. Anderson & Son.

Breeder's Young Herd—First, W. A. McHenry; second, W. J. Miller; third, A. C. Binnie; fourth, R. M. Anderson & Sons.

Calf Herd—First, W. A. McHenry; second, A. C. Binnie; third, W. J. Miller; fourth, R. M. Anderson & Son; fifth, A. C. Binnie.

Get of Sire—First, W. A. McHenry; second, W. A. McHenry; third, R. M. Anderson & Sons; fourth and sixth, A. C. Binnie; fifth, W. J. Miller.

Produce of Cow—First, W. A. McHenry; second and fourth, W. J. Miller; third, fifth and sixth, A. C. Binnie.

GALLOWAY.

EXHIBITORS.

S. M. Croft & Son, Bluff City, Kan.; C. S. Hechtner, Chariton, Iowa; A. O. Huff, Arcadia, Nebr.; Straub Bros., Avoca, Nebr.

AWARDS.

JUDGE........................CHAS. ESCHER, JR., Botna, Iowa

Bull Three Years or Over—First, Marquis, 34815, Straub Bros.; second, Meadowlawn Crusader, 322201, A. O. Huff; third, Gentleman Frank, 32188, S. M. Croft & Son.

Bull Two Years and Under Three—First, Choice Master, 35185, Straub Bros.; second, Fearnot of Maples, 35166, C. S. Hechtner; third, Captain Joe, 35578, A. O. Huff.

Bull One Year and Under Two—First, Casino, 36410, Straub Bros.; second, Midnight Signet, S. M. Croft & Son; third, Prince Favorite, 26212, C. S. Hechtner; fourth, Dixydude, 36525, A. O. Huff; fifth, Maramere, 37206, Straub Bros.

Senior Bull Calf—First, Minnie's Favorite, 36544, C. S. Hechtner; second, Monark, Straub Bros.; third, Byron Black, A. O. Huff; fourth, Cazomet, 37364, S. M. Croft & Son.

Junior Bull Calf—First, Handsome 4th, Straub Bros.; second, Iva's Favorite, C. S. Hechtner; third, Port Wallril, A. O. Huff.

Cow Three Years or Over—First, Lady Like, 34014, Straub Bros.; second, Florence of Meadowlawn, 32316, S. M. Croft & Son; third, Modesty 2nd, 34931, Straub Bros.; fourth, Capitaline, 35178, A. O. Huff, fifth, Bessie of Maples, 32252, C. S. Hechtner.

Heifer Two Years and under Three—First, Daisy Dimple, 35187, Straub Bros.; second, Clara of Maples 2nd, 35169, C. S. Hechtner; third, Merry Lady, 36183, Straub Bros.; fourth, Meadowlawn Soncy, 35202, S. M. Croft & Son; fifth, Sunbeam, 35640, A. O. Huff.

Senior Yearling Heifer—First, Marianne, 36221, Straub Bros.; second, Clara of Maples 3rd, 36214, C. S. Hechtner; third, Miss Gertrude, 36284, S. M. Croft & Son; fourth, Lily Wistful, 36524, A. O. Huff.

Junior Yearling Heifer—First, Nellie Melville, 36228, Straub Bros.; second, Lady Russell, 36594, S. M. Croft & Son; third, Lady Sampson, 36218, C. S. Hechtner; fourth, Dainty Doll, 36219, A. O. Huff.

Senior Heifer Calf—First, Nellie of Maples 2nd, 36543, C. S. Hechtner; second, Ethel of Greenbush, 37363, S. M. Croft & Son; third, Dewdrop, Straub Bros.; fourth, Dolly Dimple, A. O. Huff.

Junior Heifer Calf—First, Clara of Maples 4th, C. S. Hechtner; second, Ollie of Greenbush, 37362, S. M. Croft & Son; third, Bonnie Bell, Straub Bros.; fourth, Eveline, A. O. Huff.

Senior Champion Bull—Choice Master, 35185, Straub Bros.

Junior Champion Bull—Casino, 36410, Straub Bros.

Senior Champion Cow—Ladylike, 34014, Straub Bros.

Junior Champion Heifer—Clara of Maples 4th, C. S. Hechtner.

Grand Champion Bull—Choice Master, 35185, Straub Bros.

Grand Champion Cow—Ladylike, 34014, Straub Bros.

Exhibitor's Herd—First and second, Straub Bros.; third, C. S. Hechtner; fourth, S. M. Croft & Son; fifth A. O. Huff.

Breeder's Young Herd—First, Straub Bros.; second, C. S. Hechtner; third, S. M. Croft & Son; fourth, A. O. Huff.

Get of Sire—First and second, Straub Bros.; third and fifth, C. S. Hechtner; fourth, S. M. Croft & Son.

Produce of Cow—First, second and fourth, Straub Bros.; third and fifth, C. S. Hechtner.

POLLED DURHAM.

EXHIBITORS.

Achenbach Bros., Washington, Kansas; L. S. Huntley & Son, Chariton, Iowa; John H. Jennings, Streator, Illinois; J. H. Miller, Peru, Indiana; Walker Bros., Ord, Nebraska.

AWARDS.

JUDGE..........................E. R. SILLIMAN, Colo, Iowa.

Bull Three Years or Over—First, The Baron, 7435, Achenbach Bros.; second, Golden Sceptre, 6860, Jno. H. Jennings.

Bull Two Years and Under Three—First, Sultan's Creed, 8716, J. H. Miller; second, Master Hopewell, 9102, Jno. H. Jennings; third, Splendor, 8893, Walker Bros.

Senior Yearling Bull—First, Meadow Sultan, 8721, Achenbach Bros.; second, Iowa, L. S. Huntley & Son.

Junior Yearling Bull—First, Brawith Mint, 9152, J. H. Miller; second, Illustrator, 9343, Walker Bros.; third, Red Cloud, Walker Bros.

Senior Bull Calf—First, Serene Sultan, 365796, J. H. Miller; second, Red Champion, L. S. Huntley & Son; third, Sassy Victor, 9187, J. H. Miller; fourth, Baron Link, 9418, Achenbach Bros.; fifth, Prince of Vermillion, Jno. H. Jennings.

Junior Bull Calf—First, Prince Mysie 2nd, John H. Jennings; second, True Sultan, 9157, J. H. Miller; third, Ringleader, 9345, Walker Bros.; fourth, Baron Exception, 9419, Achenbach Bros.

Cow Three Years or Over—First, Lady Marshall, 99003, J. H. Miller; second, Wanderer's Trophy, 29820, J. H. Miller; third, Roan Belle, Walker Bros.; fourth, Golden Rose 5th, Vol. 3, Jno. H. Jennings; fifth, Golden Princess, Vol. 4, Jno. H. Jennings.

Heifer Two Years and Under Three—First, Lady Confidence, 89935, J. H. Miller; second, Queenly, Vol. 5, Jno. H. Jennings; third, Miss Charming, Walker Bros.

Senior Yearling Heifer—First, Capacious Sultana, J. H. Miller, Aurora Bell, Walker Bros.

CHAMPION POLLED DURHAM BULL AND COW
Iowa State Fair, 1912

Junior Yearling Heifer—First, Thankful Martha, Vol. 5, Achenbach Bros.; second, Queen of Miama 7th, 109608, J. H. Miller; third, Baroness Cora, Vol. 5, Achenbach Bros.; fourth, Glossilla, Jno. H. Jennings; fifth, Miss Modesty, Walker Bros.

Senior Heifer Calf—Lady of Quality, J. H. Miller; second, Malvina, Jno. H. Jennings; third, Minute 2nd, Vol. 5, Achenbach Bros.; fourth, Fairy, Walker Bros.

Junior Heifer Calf—First, Golden Thorn, J. H. Miller; second, Miss Delight, Walker Bros.; third, The Baroness, Vol. 6, Achenbach Bros.

Senior Champion Bull—Sultan's Creed, 8716, J. H. Miller.

Junior Champion Bull—Meadow Sultan, 8721, Achenbach Bros.

Senior Champion Cow—Lady Marshall, 99003, J. H. Miller.

Junior Champion Heifer—Capacious Sultana, J. H. Miller.

Grand Champion Bull—Sultan's Creed, 8716, J. H. Miller.

Grand Champion Cow—Lady Marshall, 99003, J. H. Miller.

Exhibitor's Herd—First, J. H. Miller; second, Jno. H. Jennings; third, Walker Bros.

Breeder's Young Herd—First, J. H. Miller; second, Achenbach Bros.; third, Walker Bros.

Calf Herd—First, J. H. Miller; second, Walker Bros.; third, Achenbach Bros.

Get of Sire—First, J. H. Miller; second, Achenbach Bros.; third, Walker Bros.

Produce of Cow—First, J. H. Miller; second, Achenbach Bros.; third, J. H. Miller; fourth, Walker Bros.; fifth, Jno. H. Jennings.

RED POLLED.

EXHIBITORS.

Adolph P. Arp, Eldridge, Iowa; Frank J. Clouss, Barnum, Iowa; Frank Davis & Son, Holbrook, Nebraska; Chas. Graff, Bancroft, Nebraska; Haussler Bros., Holbrook, Nebraska; W. S. Hill, Alexandria, South Dakota; Fred W. Lahr, Brooks, Iowa; J. W. Larrabee, Earlville, Illinois; Thos. L. Leonard, Beaver Crossing, Nebraska.

AWARDS.

JUDGE......................JAMES WILSON, Brookings, S. D.

Bull Three Years or Over—First, Teddy's Best, 17603, Haussler Bros.; second, Reo, 18766, Frank Davis & Son; third, Ruperta's Goods, 19226, Frank J. Clouss; fourth, Uno, 15662, Thos. L. Leonard; fifth, Leo, 20121, Fred W. Lahr.

Bull Two Years and Under Three—First, Breadwinner, 21322, Thos. L. Leonard; second, Sir William, 19872, J. W. Larrabee; third, Bryan, 23050, A. P. Arp.

Senior Yearling Bull—First, Paul, 20994, Frank J. Clouss; second, Luna Lad, 15th, 27022, A. P. Arp; third, J. Rose, 21041, J. W. Larrabee.

Junior Yearling Bull—First, Nailor, 21864, Fred W. Lahr; second, Luna Lad 14th, 23107, A. P. Arp; third, Cosys Napoleon Apple, 21316, Thos. L. Leonard; fourth, Forester, 22308, Chas. Graff; fifth, Charmer, 21866, Haussler Bros.

Senior Bull Calf—First, Kansas City Lad, 23058, Frank Davis & Son; second, Jim, 22520, Frank J. Clouss; third, Brownie, 22574, Thos. L. Leonard; fourth, Luna Lad 26th, 22409, A. P. Arp; fifth, Liza Lad, 23108 A. P. Arp.

Junior Bull Calf—First, Ikea, Frank J. Clouss; second, Mariom, 23076, J. W. Larrabee; third, Imperial, Chas. Graff; fourth, Big Cremo, 23059, Frank Davis & Son; fifth, Lofty, 23110, Thos. L. Leonard.

Cow Three Years or Over—First, Lena, 28536, Frank J. Clouss; second, Liza, 26498, A. P. Arp; third, Inas, 25786, Chas. Graff; fourth, Tip, 26936, Haussler Bros.; fifth, Tulip, 22864, Thos. L. Leonard.

Heifer Two Years and Under Three—First, Gazelle, 32011, Haussler Bros.; second, Polka, 31189, Frank J. Clouss; third, Lady Dorothy 2nd, 32349, Frank Davis & Son; fourth, Valentine Lady, 32351, Frank Davis & Son; fifth, Dahlia, 32326, Frank J. Clouss.

Senior Yearling Heifer—First, Jennie, 32845, Haussler Bros.; second, Luna Lassie 16th, 33010, A. P. Arp; third, Luna Lassie 18th, 34294, A. P. Arp; fourth, Xmas Bell, 34060, Frank Davis & Son; fifth, Pauline, 25417, Frank J. Clouss.

Junior Yearling Heifer—First, Ida Loo, 34570, Chas. Graff; second, Vina, 34569, Chas. Graff; third, Lady Itoo, 34922, Thos. L. Leonard; fourth, Wilda, 34923, Thos. L. Leonard; fifth, Minnie, Haussler Bros.

Senior Heifer Calf—First, Pansy, 34842, Frank J. Clouss; second, Red Rose, 35556, Haussler Bros.; third, Duchess, Frank J. Clouss; fourth, Lady Starlight, Thos. L. Leonard; fifth, Rosaile, 35546, Chas. Graff.

Junior Heifer Calf—First, Tippie, Haussler Bros.; second, Princess, Thos. L. Leonard; third, Luna Lassie 24th, 35567, A. P. Arp; fourth, Violet Cremo, 35517, Frank Davis & Son; fifth, Cremo Belle, 35516, Frank Davis & Son.

Senior Champion Bull—Teddy's Best, 17603, Haussler Bros.

Junior Champion Bull—Paul, 20994, Frank J. Clouss.

Senior Champion Cow—Lena, 28536, Frank J. Clouss.

Junior Champion Heifer—Ida Loo, 34570, Chas. Graff.

Grand Champion Bull—Teddy's Best, 17603, Haussler Bros.

Grand Champion Cow—Lena, 28536, Frank J. Clouss.

Exhibitor's Herd—First, Haussler Bros.; second, Thos. L. Leonard; third, Frank J. Clouss; fourth, Chas. Graff; fifth, A. P. Arp.

Breeder's Young Herd—First, Chas. Graff; second, Haussler Bros.; third, Frank J. Clouss; fourth, Frank Davis & Son; fifth, Thos. L. Leonard.

Calf Herd—First, Haussler Bros.; second, Thos. L. Leonard; third, Frank J. Clouss; fourth, Chas. Graff; fifth, J. W. Larrabee.

Get of Sire—First, Thos. L. Leonard; second, and third, Haussler Bros.; fourth, A. P. Arp; sixth, Frank Davis & Son.

Produce of Cow—First, Frank J. Clouss; second, and fourth, Chas. Graff; third, A. P. Arp; fifth, Thos. L. Leonard.

HOLSTEIN.

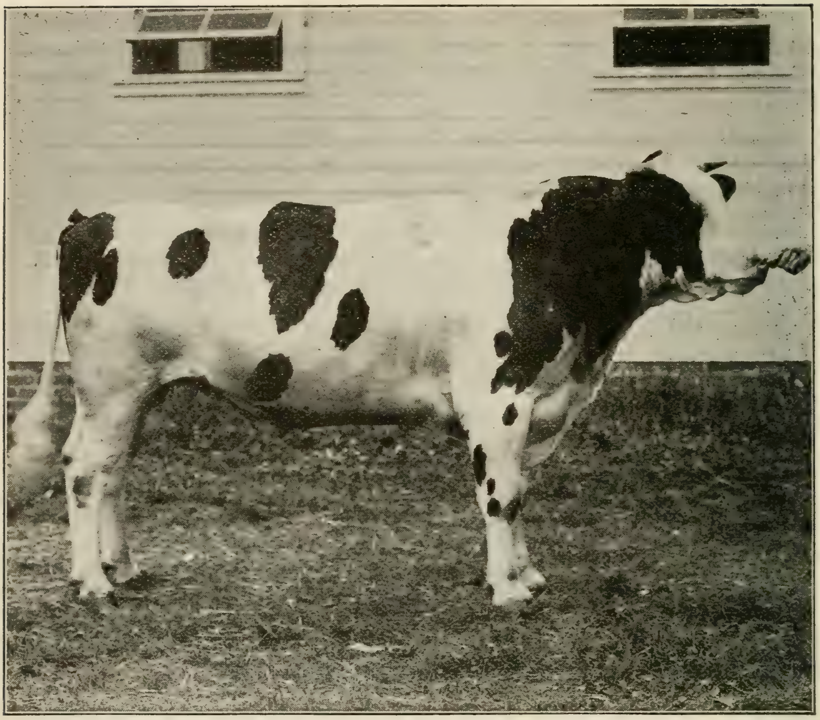
EXHIBITORS.

Iowana Farms, Davenport, Iowa; C. B. McCanna, Burlington, Wisconsin; C. A. Nelson, Waverly, Iowa; Frank White, Hampton, Iowa.

AWARDS.

Judge......................Dr. M. B. Wood, Mankato, Minn.

Bull Three Years Old or Over—First, Rockdale Perfection DeKol, 51371, Iowana Farms; second, Groveland Inka Hijlaard, 57856, Frank White; third, Cornucopia Pontiac Johanna Lad, 48355, Frank White; fourth, Jessie Gem Inka Son, 62923, C. B. McCanna.



FIRST TWO-YEAR-OLD HOLSTEIN BULL
Iowa State Fair 1912

Bull Two Years Old and Under Three—First, Hengerveld King, 73774, C. A. Nelson; second, Sir Korndyke Hengerveld De Kol, 72532, Iowana Farms.

Bull One Year Old and Under Two—First, Model Skylark, 82293, C. A. Nelson; second, Flosmore Canary Vale DeKol, 87460, Iowana Farms; third, Groveland Sir Pontiac Inka, 83645, Frank White; fourth, Coloma Maid DeKol Son, C. B. McCanna.

Senior Bull Calf—First, Groveland Aagie De Kol, 97765, Frank White; second, Inka Villetta Bergsma, 97921, C. B. McCanna; third, Iowana Colantha Sir Clyde, 88344, Iowana Farms; fourth, C. A. Nelson; fifth, Groveland Sir Pontiac Hijlaard, 97767, Frank White.

Junior Bull Calf—First, Jessie Gem Inka Son 8th, 97703, C. B. McCanna; second, C. A. Nelson; third, Frysland Sir Ormsby, Iowana Farms.

Cow Four Years or Over—First, Meadowbrook Queen DeKol 2nd, Iowana Farms; second, Netherland Tweet Pieterje, 84064, Frank White; third, Pauline Witkop Netherland, 78112, Frank White; fourth, Colanthe Johanna of Elmbrook, 106024, C. B. McCanna; fifth, Lady Ono Hijlaard, 58193, Frank White; sixth, Betz Fairfax De Kol, 96594, C. B. McCanna, *Cow Three Years and Under Four*—First, Chloe Artis Jewell of Cedarside, 120932, C. A. Nelson; second, Lady Wayne Sarcastic, 134335, Iowana Farms; third, Princess Sletske, 126051, C. B. McCanna; fourth, Groveland Idske Pontiac, 137138, Frank White.

Heifer Two Years and Under Three—First, Groveland Korndyke Cornucopia, 137137, Frank White; second, Colantha Johanna of Cedarside, 152087, C. A. Nelson; third, Miss Korndyke Daisy Mercedes, 137788, Iowana Farms; fourth, Netherland DeKol Pietertje 2nd, 131560, Iowana Farms; fifth, Groveland Pontiac Hijlaard, 137139, Frank White; sixth, High Lawn Inago, 135657, C. B. McCanna.

Senior Yearling Heifer—First, Foekje De Kol Hengerveld, 148721, Iowana Farms; second, Jewell Abbekerk 3rd, 156624, C. A. Nelson; third, Canary Princess, 144430, Iowana Farms; fourth, Elizabeth Herbert Jewell, 159058, C. A. Nelson; fifth, Fairee Netherland 4th, 161753, C. A. Nelson.

Junior Yearling Heifer—First, Groveland De Kol Inka, 165444, Frank White; second, Beauty De Kol De Vries 2nd, 165443, Frank White; third, Miss Fayne Piebe, 162887, Iowana Farms; fourth, Pauline Skylark of Cedarside, 176451, C. A. Nelson; fifth, Iowana Gretque Hengerveld, 175842, Iowana Farms; sixth, Retta Posch, 153761, C. B. McCanna.

Senior Heifer Calf—First, Groveland Inka Netherland, 182097, Frank White; second, Iowana Colantha Vieman De Kol, 166776, Iowana Farms; third, Iowana Colantha Aaggie Burke, 166769, Iowana Farms; fourth, Artis Pontiac Susie Judith, 177956, Frank White & Son; fifth, Groveland Pauline Hijlaard, 179551, C. A. Nelson; sixth, Alice Marion Koningin, 163081, C. B. McCanna.

Junior Heifer Calf—First, Butter King Molly Segis, 172350, Frank White; second, Frysian Canary, Iowana Farms; third, Groveland Hijlaard Korndyke, 182095, Frank White; fourth, DeKol Minke Johanna, 182867, C. B. McCanna; fifth, Groveland Beauty De Kol Pontiac, 182094, Frank White; sixth, Crown Prince, Segis Nanne, 179278, C. A. Nelson.

Senior Champion Bull—Rockdale Perfection DeKol, 51371, Iowana Farms.

Junior Champion Bull—Model Skylark, 82293, C. A. Nelson.

Senior Champion Cow—Chloe Artis Jewell of Cedarside, 120932, C. A. Nelson.

Junior Champion Heifer—Foekje De Kol Hengerveld, 148721, Iowana Farms.

Grand Champion Bull—Rockdale Perfection De Kol, 51371, Iowana Farms.

Grand Champion Cow—Chloe Artis Jewell of Cedarside, 120932, C. A. Nelson.

Exhibitor's Herd—First, Iowana Farms; second, C. A. Nelson; third, Frank White; fourth, Iowana Farms; fifth, C. B. McCanna.

Breeder's Young Herd—First, Frank White; second, Iowana Farms; third, C. A. Nelson.

Calf Herd—First, Frank White; second and third, Iowana Farms; fourth, C. B. McCanna; fifth, C. A. Nelson.

Get of Sire—First and fifth, Frank White; second, C. A. Nelson; third and fourth, Iowana Farms.

Produce of Cow—First and second, Frank White; third, C. A. Nelson; fourth and fifth, Iowana Farms.

Premier Exhibitor—Iowana Farms.

Premier Breeder—Frank White.

JERSEY.

EXHIBITORS.

E. Bruins, Fairwater, Wisconsin; G. A. Chaffee, Minneapolis, Minnesota; Cotta & Williams, Galesburg, Illinois; Nelle Fayban, Geneva, Illinois; J. W. Love, Minneapolis, Minnesota; Geo. Redhead, Mgr. Des Moines, Iowa; D. W. Rich, Mt. Pleasant; Smith & Roberts, Beatrice, Nebraska; H. C. Young, Lincoln, Nebraska.

AWARDS.

JUDGE.....................W. L. HUNTER, Lincoln, Nebraska.

Bull Three Years Old or Over—First, Stockwell's Fern Lad, 87843, Smith & Roberts; second, Beauvoir's King, 88006, E. Bruins; third, Combination Golden Prince, 79767, G. A. Chaffee; fourth, Guenons Gay Lad, 67140, H. C. Young; fifth, Eminent Rosette, 66050, Cotta & Williams.

Bull Two Years Old and Under Three—First, Ibsen's Glory, 92986, E Bruins; second, Ocean Blue, 99477, Nelle Fabyan; third, Duke's Raleigh. 87581, H. C. Young; fourth, Clarencia's Prince, 96629, Cotta & Williams; fifth, Raleigh Ibsen, 94890, E. Bruins; sixth, Silverine's Combination, 89734, Smith & Roberts.

Bull One Year Old and Under Two—First, Viola's Elmhurst Prince, G. A. Chaffee; second, Stockwell's Rioter, 90243, Smith & Roberts; third, Kinloch's Golden Jolly, Cotta & Williams; fourth, Western King's Chief, E. Bruins; fifth, Jamont's Jinks, H. C. Young.

Senior Bull Calf—First, Stoockwell's Champion, Smith & Roberts; second, Oxford Sultan Lad, Smith & Roberts; third, Ibsen's Noble Lad, 105614, E. Bruins; fourth, Raleigh's Gold Coin, H. C. Young; fifth, Raleigh's Duke of W., H. C. Young.

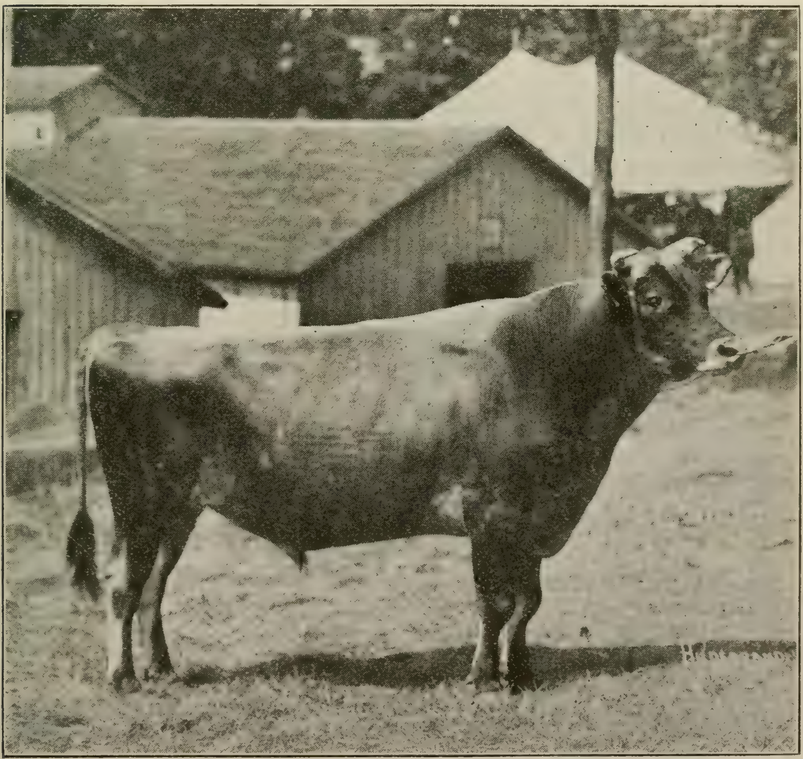
Junior Bull Calf—First, Warder's Stockwell, Smith & Roberts; second, Baron's Ibsen, E. Bruins; third, Leda's Champion Lad, G. A. Chaffee, Shylock's Jamont G., H. C. Young; fifth, Nobleman of Homewood, 103824, Cotta and Williams.

Cow Four Years or Over—First, Warder's Proud Beauty, 234158, Smith & Roberts; second, Couline, 234538, E. Bruins; third, Golden Maid's Princess Lady, 234180, Smith & Roberts; fourth, Kate's Mabel, 185933, H. C. Young; fifth, Sweet Kitty, 256014, G. A. Chaffee.

Cow Three Years and Under Four—First, Ibsen's Cherry, 264721, E. Bruins; second, Fontain's Katydid, 241680, Smith & Roberts; third, Stockwell's Augustine, Smith & Roberts; fourth, Jamont's Beauty Girl, 248600, H. C. Young; fifth, Eminent's Grace, 229296, H. C. Young.

Heifer Two Years and Under Three—First, Belmont's Silverine, 265077, Smith & Roberts; second, Fontaine Clearview Beauty, 271059, E. Bruins; third, Jessie Plymouth, 239213, Cotta & Williams; fourth, Raleigh's Calais, 270612, G. A. Chaffee; fifth, Rose Tulips Sultana, 232566, H. C. Young.

Senior Yearling Heifer—First, Oxford's Lady Wonder, 267066, Smith & Roberts; second, Oxford's Lady Sultan, 267067, Smith & Roberts; third, Shylock's Golden Fern, 259540, H. C. Young; fourth, Bonnie Pearly, 271654, G. A. Chaffee; fifth, May Flower's Noble Lass, 259268, E. Bruins.



PRIZE-WINNING JERSEY BULL
Iowa State Fair, 1912

Junior Yearling Heifer—First, Belle Delle Rosette, 261231, Cotta & Williams; second, Majesty's Ethel, 259269, E. Bruins; third, Oxford's Silverine, Smith & Roberts; fourth, Eminent's Cassie Daisy, G. A. Chaffee; fifth, Ferndale Princess, J. W. Love.

Senior Heifer Calf—First, Ibsen's Glory Couline, 274077, E. Bruins; second, Combination's Prince's Lady, G. A. Chaffee; third, Jamont's Queen Y, H. C. Young; fourth, Raleigh's Gay Girl, H. C. Young; fifth, Eminent's Reminder 2d, 267164, Cotta & Williams.

Junior Heifer Calf—First, Raleigh's Brown Baby, H. C. Young; second, Stockwell Lady Fern, Smith & Roberts; third, Raleigh's Victoria, H. C. Young; fourth, Ibsen's Glory's Beauty, 274081, E. Bruins; fifth, Tulip's Plymouth Beauty, Cotta & Williams.

Senior Champion Bull—Stockwell's Fern Lad, 87843, Smith & Roberts.

Junior Champion Bull—Stockwell's Champion, Smith & Roberts.

Senior Champion Cow—Warder's Proud Beauty, 234158, Smith & Roberts.

Junior Champion Heifer—Ibsen's Glory Couline, 274077, E. Bruins.

Grand Champion Bull—Stockwell's Fern Lad, 87843, Smith & Roberts.

Grand Champion Cow—Warder's Proud Beauty, 234158, Smith & Roberts.

Exhibitor's Herd—First, Smith & Roberts; second, E. Bruins; third, H. C. Young; fourth, G. A. Chaffee; fifth, E. Bruins.

Breeder's Young Herd—First, Smith & Roberts; second, G. A. Chaffee; third, E. Bruins; fourth, H. C. Young; fifth, Smith and Roberts.

Calf Herd—First, E. Bruins; second, Smith & Roberts; third, H. C. Young; fourth, Smith & Roberts; fifth, G. A. Chaffee.

Get of Sire—First, E. Bruins; second, Smith & Roberts; third, Smith & Roberts; fourth, H. C. Young; fifth, E. Bruins.

Produce of Cow—First, Smith & Roberts; second and third, H. C. Young; fourth, Smith & Roberts; fifth, E. Bruins.

Premier Exhibitor—Smith & Roberts.

Premier Breeder—Smith & Roberts.

GUERNSEYS.

EXHIBITORS.

Cotta & Williams, Galesburg, Illinois; W. W. Marsh, Waterloo, Iowa; J. H. Williams, Waukesha, Wisconsin; Wilcox & Stubbs, Des Moines, Iowa.

AWARDS.

JUDGE.....................WILL FORBES, Washington, D. C.

Bull Three Years Old or Over—First, Holden 4, 12179, Wilcox & Stubbs.

Bull Two Years Old and Under Three—First, Bob Rilma, 16141, Wilcox & Stubbs; second, Park Ceaser, 22002, Jno. H. Williams.

Bull One Year Old and Under Two—First, Raymond of Sarnia, 19172, Jno. H. Williams; second, Manoa of Iowa, 20371, Wilcox & Stubbs; third, Gallant Knight of Iowa, 19511, Wilcox & Stubbs; fourth, Park's Quill Boy, 21157, Jno. H. Williams.

Senior Bull Calf—First, Queen's Prince, 21291, Wilcox & Stubbs; second, Park's Flossy King, 21159, Jno. H. Williams; third, Natoma Canto, 20976, Cotta & Williams.

Junior Bull Calf—First, Aline's Holden, Wilcox & Stubbs; second, Bob Rilma 2nd, Wilcox & Stubbs.

Cow Four Years or Over—First, Aline of Lawton 2nd, 23153, Wilcox & Stubbs; second, Eagle Quill 2nd, 18121, Jno. H. Williams; third, Patricia of Sarnia, 40235, Wilcox & Stubbs; fourth, Calla Luda, 27092, Wilcox & Stubbs; fifth, Glenwood's Free Silver Girl, 20929, Wilcox & Stubbs.

Cow Three Years and Under Four—First, Princess Euphemia, 27843, Wilcox & Stubbs.

Heifer Two Years and Under Three—First, Daisy Bell of Sarnia, 35667, Wilcox & Stubbs; second, Bell Daisy of Sarnia, 35668, Wilcox & Stubbs; third, Geneva Walter Maple, Jno. H. Williams.

Senior Yearling Heifer—First, Park's Princess Rhea, 34930, Jno. H. Williams; second, Sweet Lassie 2nd, 32356, Wilcox & Stubbs; third, Short of the Grandes Capelles, 34354, Wilcox & Stubbs; fourth, Blossom's Bridget of Iowa, 35025, Wilcox & Stubbs; fifth, Beau Donald's Thalma, 35024, Wilcox & Stubbs.

Junior Yearling Heifer—First, Rhea's Park May, 36506, Jno. H. Williams; second, Manoa's May Rose of Iowa, 37046, Wilcox & Stubbs.

Senior Heifer Calf—First, Park's Isabella 2nd, 38814, Jno. H. Williams; second, Daisy Belle of Fair View, 40248, Wilcox & Stubbs; third, Belle Daisy of Fair View, 40249, Wilcox & Stubbs; fourth, France's Rilma of Iowa, Wilcox & Stubbs; fifth, Rose Rilma of Iowa, Wilcox & Stubbs.

Junior Heifer Calf—First, Calla's Rilma, Wilcox & Stubbs; second, Park's Elizabeth, Jno. H. Williams.

Senior Champion Bull—Bob Rilma, 16141, Wilcox & Stubbs.

Junior Champion Bull—Raymond of Sarnia, 19172, Jno. H. Williams.

Senior Champion Cow—Aline of Lawton 2nd, 23153, Wilcox & Stubbs.

Junior Champion Heifer—Park's Princess Rhea, 34930, Jno. H. Williams.

Grand Champion Bull—Bob Rilma, 16141, Wilcox & Stubbs.

Grand Champion Cow—Aline of Lawton 2nd, 23153, Wilcox & Stubbs.

Exhibitor's Herd—First, Wilcox & Stubbs; second, Jno. H. Williams.

Breeder's Young Herd—First, Jno. H. Williams; second, Wilcox & Stubbs.

Calf Herd—First, Jno. H. Williams; second, Wilcox & Stubbs.

Get of Sire—First, Jno. H. Williams; second, Wilcox & Stubbs.

Produce of Cow—First, Jno. H. Williams; second, Wilcox & Stubbs.

Premier Exhibitor—Wilcox & Stubbs.

Premier Breeder—Jno. H. Williams.

SPECIAL PRIZE OFFERED BY AMERICAN GUERNSEY CATTLE CLUB.

Premier Breeder—Jno. H. Williams.

AYRSHIRES.

EXHIBITOR.

Adam Seitz, Waukesha, Wisconsin.

AWARDS.

JUDGE........................M. D. WOOD, Mankato, Minn.

Bull Three Years or Over—First, Bargenoch, Gay Cavalier, 11981.

Bull Two Years and Under Three—First, Peter Pan, 12701.

Bull One Year and Under Two—First, Cock-A-Bendie of Spring City; second, ——————.

Bull Calf Under One Year—First, Oldhall Spicey John, 14841; second, Bargenoch Rising Star, 14843; third, Bargenoch Perfection, 14844.

Cow Four Years or Over—First, Silver Pet of Spring City, 23502; second, Muirrosalie's Last, 27220; third, Klinford Bell 3rd, 30643.

Cow Three Years and Under Four—First, Hillhouse Maud 2nd, 28900; second, Oldhall Sarah 3rd, 28159.

Heifer Two Years and Under Three—First, Benchan Dorathy, 32720; second, Kilnford Belle 4th, 29374.

Heifer One Year and Under Two—First, Duchess Croft, 30176; second, May Queen C 2nd, 32937.

Heifer Calf Under One Year—First, Bargenoch Queen, 32943; second. Bargenoch Silver Pet, 32946; third, Bargenoch Licesee Lindsay, 32947.

Senior Champion Bull—Bargenoch Gay Cavalier, 11981.

Junior Champion Bull—Oldhall Spicey John, 14841.

Senior Champion Cow—Silver Pet of Spring City, 23502.

Junior Champion Heifer—Bargenoch Queen, 32943.

Grand Champion Bull—Bargenoch Gay Cavalier, 11981.

Grand Champion Cow—Silver Pet of Spring City, 23502.

Exhibitor's Herd—First and second.

Breeder's Young Herd—First.

Get of Sire—First and second.

Produce of Cow—First and second.

Premier Exhibitor—First.

Premier Breeder—First.

BROWN SWISS.

EXHIBITORS.

Allynhurst Farm, Delavan, Wisconsin; Marion T. Anderson, Washington, Iowa; H. W. Ayers, Honey Creek, Wisconsin.

AWARDS.

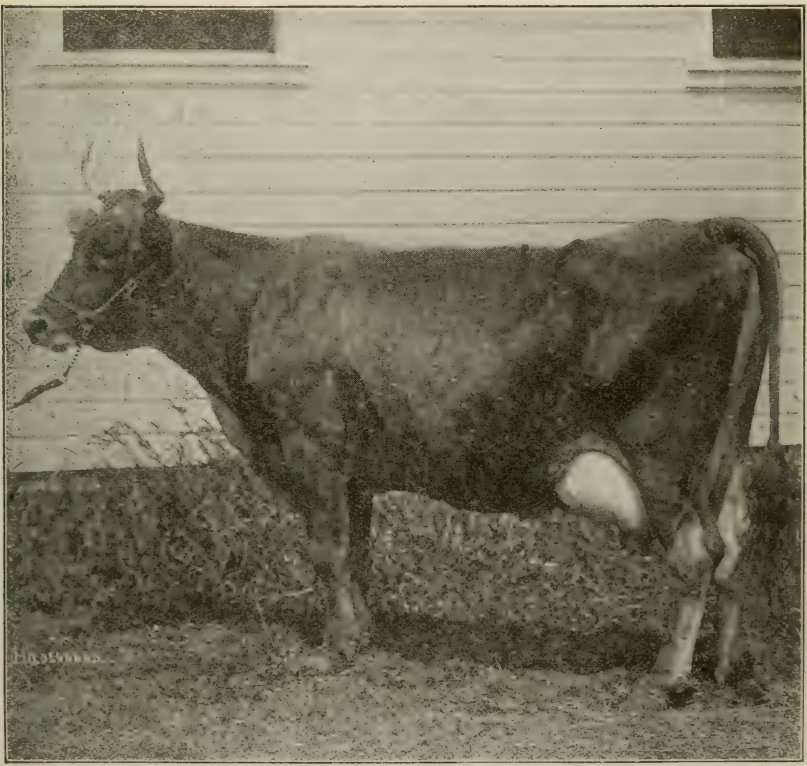
JUDGE.....................WILL FORBES, Washington, D. C.

Bull Three Years or Over—First, Zell, 2512, H. W. Ayers; second, Casper C., 1999, Allynhurst Farm.

Bull Two Years and Under Three—First, Casper Delta, 3128, Marion T. Anderson; second, Myone Boy, 3120, Allynhurst Farm.

Bull One Year and Under Two—First, Zell A, 3508, H. W. Ayers; second, Chris, 3578, H. W. Ayers; third, Myson of Allynhurst, 3624, Allynhurst Farm.

Bull Calf Under One Year—First, Junker 2nd, H. W. Ayers; second, Ayer's Traveler, 3631, H. W. Ayers; third, Allynhurst Farm.



PRIZE WINNING BROWN SWISS COW
Iowa State Fair, 1912

Cow Four Years or Over—First, Upland Nick's Prize, 3670, H. W. Ayers; second, Ariene, 2769, Allynhurst Farm; third, Myone Baby, 3378, Allynhurst Farm.

Cow Three Years and Under Four—First, Betty of Allynhurst, 4541, Allynhurst Farm; second, Florinda A., 4661, Marion T. Anderson; third, Browney B., 3968, H. W. Ayers.

Heifer Two Years and Under Three—First, Myone of Allynhurst, 4546, Allynhurst Farm; second, Susan Arrand 2nd, 4718, H. W. Ayers; third, Princess Erima, 5148, Allynhurst Farm.

Heifer One Year and Under Two—First, Allynhurst Farm; second, Sultana Crocus, 4781, H. W. Ayers; third, Zell's Ada, 5117, H. W. Ayers.

Heifer Calf Under One Year—First, Allynhurst Farm; second and third, H. W. Ayers.

Senior Champion Bull—Zell A., 3508, H. W. Ayers.

Junior Champion Bull—Junker 2nd, H. W. Ayers.

Senior Champion Cow—Upland Nick's Prize, 3670, H. W. Ayers.

Junior Champion Heifer—Allynhurst Farm.

Grand Champion Bull—Zell A., 3508, H. W. Ayers.

Grand Champion Cow—Upland Nick's Prize, 3670, H. W. Ayers.

Exhibitor's Herd—First, H. W. Ayers; second and third, Allynhurst Farm.

Breeder's Young Herd—First, H. W. Ayers; second, Allynhurst Farm.

Get of Sire—First and third, Allynhurst Farm; second, H. W. Ayers.

Produce of Cow—First, Allynhurst Farm; second and third, H. W. Ayers.

Premier Exhibitor—H. W. Ayers.

Premier Breeder—H. W. Ayers.

FAT SHORT-HORNS (Pure Bred).

EXHIBITORS.

J. H. Miller, Peru, Indiana; L. C. Oloff, Ireton, Iowa; D. Tietje, Bellevue, Iowa; W. W. Vaughn, Marion, Iowa.

AWARDS.

JUDGE........................... A. J. RYDEN, Abingdon, Ill.

Steer, Spayed or Martin Heifer Under One Year—First, Dutch Joe 2nd, D. Tietjen; second, Royal C., C. A. Saunders; third, Jock of Elmlawn, L. C. Oloff.

Champion Steer, Spayed or Martin Heifer—First, Dutch Joe 2nd, D. Tietjen.

FAT SHORT-HORNS.

(Grade or Cross Bred.)

Steer, Spayed or Martin Heifer, Two Years and Under Three—First, John D., C. A. Saunders.

Steer, Spayed or Martin Heifer, One Year and Under Two—First, George, C. A. Saunders.

Steer, Spayed or Martin Heifer, Under One Year—First, George White, C. A. Saunders.

Champion Steer, Spayed or Martin Heifer—John D., C. A. Saunders.

Group of Three Head Owned by Exhibitor—C. A. Saunders.

FAT HEREFORDS.

(Pure Bred.)

EXHIBITORS.

E. M. Cassady & Son, Whiting, Iowa; J. P. Cudahy, Belton, Missouri; Robt. H. Hazlitt, Eldorado, Kansas; C. A. Saunders, Manilla, Iowa; Cyrus A. Tow, Norway, Iowa.

AWARDS.

JUDGE.......................J. P. CUDAHY, Kansas City, Mo.

Steer, Spayed or Martin Heifer, Two Years and Under Three—First, Fairfax, 344759, Cyrus A. Tow; second, Martin, 348937, E. M. Cassady & Son.

Steer, Spayed or Martin Heifer, One Year and Under Two—First, Brocade 4th, 364833, Cyrus A. Tow; second, Albany March On, 364573, Cyrus A. Tow; third, Happy No. 58, E. M. Cassady & Son.

Steer, Spayed or Martin Heifer, Under One Year—First, Blanco, Robt. H. Hazlitt; second, Standard 1st, 388035, Cyrus A. Tow; third, Mike 59, E. M. Cassady & Son.

Champion Steer, Spayed or Martin Heifer—Blanco, Robt. H. Hazlitt.

Group of Three Head Owned by Exhibitor—First, Cyrus A. Tow; second, E. M. Cassady & Son.

(GRADE OR CROSS BRED.)

Steer, Spayed or Martin Heifer, Two Years and Under Three—First, Lant, Cyrus A. Tow; second, Joe, E. M. Cassady & Son.

Steer, Spayed or Martin Heifer, One Year and Under Two—First, Bob, E. M. Cassady & Son; second, Agitator 1st, Cyrus A. Tow.

Steer, Spayed or Martin Heifer, Under One Year—First, At Last, Cyrus A. Tow; second, Jack, E. M. Cassady & Son.

Champion Steer, Spayed or Martin Heifer—Lant, Cyrus A. Tow.

Group of Three Head Owned by Exhibitor—First, Cyrus A. Tow; second, E. M. Cassady & Son.

FAT ABERDEEN ANGUS.

(PURE BRED.)

EXHIBITOR.

W. J. Miller, Newton, Iowa.

AWARDS.

JUDGE........................C. J. MARTIN, Jefferson, Iowa.

Steer, Spayed or Martin Heifer, Two Years and Under Three—First, King Burn.

Steer, Spayed or Martin Heifer, One Year and Under Two—First, Kingsteer of Rosemere.

Steer, Spayed or Martin Heifer, Under One Year—First, King Keylex.

Champion Steer, Spayed or Martin Heifer—King Burn.

Group or Three Head Owned by Exhibitor—First.

(GRADE OR CROSS BRED.)

Steer, Spayed or Martin Heifer, Two Years and Under Three—First, Jerry.

Steer, Spayed or Martin Heifer, One Year and Under Two—First, Patrick King.

Steer, Spayed or Martin Heifer, Under One Year—First, Good Choice.

Champion Steer, Spayed or Martin Heifer—Patrick King.

Group of Three Head Owned by Exhibitor—First.

GRAND CHAMPIONS.

Grand Champion—Blanco, Robt. H. Hazlitt.

Grand Champion Group—Cyrus A. Tow.

SWINE DEPARTMENT.

SUPERINTENDENT......R. S. JOHNSTON, Columbus Junction, Ia.

POLAND CHINAS.

EXHIBITORS.

F. W. Akers, Laurel, Iowa; E. S. Barker, Doon, Iowa; L. W. Blackford, Hillsboro, Iowa; R. R. Blake, Waukee, Iowa; G. H. Burge, Mt. Vernon, Iowa; J. H. Cope, Carlisle, Iowa; M. H. Corey, Lockridge, Iowa; C. C. Croxen, Atalissa, Iowa; J. I. Davis, Mt. Hamil, Iowa; H. H. Diers, St. Olaf, Iowa; M. A. Dowling, Reasnor, Iowa; J. S. Fawcett & Son, Springdale, Iowa; R. H. Fichtenmueller, Farmington, Iowa; S. Fleming, Stuart, Iowa; R. W. Halford, Manning, Iowa; Fred H. Hassler, Manning, Iowa; Chas. W. Humerick, Atlantic, Iowa; J. D. Jackson, Gilbert Station, Iowa; C. F. Keeling, Avon, Iowa; A. Kool, Fifield, Iowa; Joe Kramer, Elkader, Iowa; Chas. Krumm, Postville, Iowa; P. B. Lake, Moscow, Iowa; Henry Lauer, Eldorado, Iowa; J. F. Leahy, Parnell, Iowa; Wm. Lenz, Ankeny, Iowa; J. V. Lingenfelter, Altoona, Iowa; A. J. Lytle, Oskaloosa, Iowa; S. G. McFadden, West Liberty, Iowa; C. A. Marker, Tolono, Illinois; G. F. Marshall & Son, Monroe, Iowa; Theo. Martin, Bellevue, Iowa; Jos. Meekma, Monroe, Iowa; J. E. Meharry, Tolono, Illinois; E. M. Metzger, Fairfield, Iowa; Jno. F. Meyer, Newton, Iowa; F. H. Moore, Wiota, Iowa; Isaac Overton, Knoxville, Iowa; D. H. Paul, Laurel, Iowa; F. G. Paul, Marshalltown, Iowa; Paul & Wilson, Laurel, Iowa; C. A. Purvis, West Liberty, Iowa; S. R. Reed, Monteith, Iowa; E. N. Riddlesbarger, Dysart, Iowa; D. B. Rightmire, Monticello, Missouri; J. L. Risley, Ames, Iowa; S. A. Roberts, Knoxville, Iowa; Chas. L. Santman, Dysart, Iowa; P. F. Schwimley, Kalona, Iowa; F. J. Sexsmith, Orient, Iowa; Fred Sievers, Audubon, Iowa; Whitacre & Son, West Liberty, Iowa; Wigstone Bros., Stanton, Iowa; Williams Bros., Villisca, Iowa; E. C. Wilson, West Liberty, Iowa; J. T. Winborn, Kalona, Iowa; Mark I. Shaw, Monroe, Iowa; Chas. H. Stone, Muscatine, Iowa; W. Z. Swallow, Waukee, Iowa; R. W. Thomas, St. Joseph, Missouri; L. C. Burford, Monticello, Mo.

AWARDS.

JUDGE....................J. M. STEWART, Ainsworth, Iowa.

Boar Two Years or Over—First, Mables Wonder, 168019, R. W. Halford; second, Big Wonder, 160349, Fred Sievers; third, Chief Price Again 2nd, 170067, Henry Lauer; fourth, C. Wonder, 157779, Chas. H. Krumm; fifth, Giant King, 164423, G. F. Marshall & Son; sixth, Model Prince, 181463, Wm. Lenz; seventh, Prince Ita, 163839, Joe Kramer.

Boar Eighteen Months, Under Two Years—First, Comptroller's Boy, 191681, J. E. Meharry; second, High Ideal, Paul & Wilson; third, Great Wonder, 191675, J. L. Risley; fourth, Key West, 178385, J. F. Leahy; fifth, Big Bones Wonder, 181753, F. G. Paul; sixth, Sam Mc, 190125, C. C. Croxen.

Boar One Year, Under Eighteen Months—First, A. Model, 190713, S. A. Roberts; second, Fashion Sheet, 63596, Fred H. Hassler; third, Choice Look 2nd, 187247, S. R. Reed; fourth, Banker's Model 2nd, 187187, J. E. Meharry; fifth, Lauer's Crow, 185957, Henry Lauer; sixth, Big Orient, 188745, F. J. Sexsmith; seventh, Model Longfellow, 180587, F. G. Paul.

Boar Six Months, Under One Year—First, Chief I Know, 191159, Chas. H. Krumm; second, Mastodon Hadley, 191347, F. G. Paul; third, Columbia Chief, 191128, W. Z. Swallow; fourth, Perfect Banker, 191677, J. E. Meharry; fifth, Highball, 191671, J. R. Risley; sixth, Prosperity, 191383, D. B. Rightmire; seventh, Big Jake, 191985, Chas. W. Humerick.

Boar Under Six Months—First, Mable's Giant, 190779, E. S. Barker; second, D. H. Paul; third, Henry Lauer; fourth, Monticello Boy, L. C. Burford; fifth, Henry Lauer; sixth, Big Tom 1st, S. R. Reed; seventh F. G. Paul.

Sow Two Years or Over—First, Chief Modesty, F. G. Paul; second, Black Maid, 402874, Wigstone Bros.; third, Louise Harvester, 432146, J. E.

Meharry; fourth, Hadley's Lady Price, 451292, F. W. Akers; fifth, Hunt's Giantess, 137878, Wigstone Brothers; sixth, Glad Bells, 453978, Joe Kramer; seventh, Laurel Queen 1st, 376276, D. H. Paul.

Sow Eighteen Months, Under Two Years—First, Vala Spellbinder 7th, 453980, Joe Kramer; second, Nannie 9th, 425536, J. E. Meharry; third, Balanced Queen, 453704, F. G. Paul; fourth, Jumbo's Perfection, 453702, F. G. Paul; fifth, Superior Maid, 453832, F. W. Akers; sixth, Beauty Lass, 454222, D. H. Paul; seventh, Nannie 10th, 425538, J. E. Meharry.

Sow One Year, Under Eighteen Months—First, Louise Model, 443834, J. E. Meharry; second, Bashful Model, 452482, J. E. Meharry; third, Smooth Giantess, 453726, F. G. Paul; fourth, Spell's Best, 454224, D. H. Paul; fifth, Bonnie U. S., 453544, M. H. Corey; sixth, Wanda, 452490, E. C. Wilson; seventh, Matchless Belle, 454124, Joe Kramer.

Sow Six Months, Under One Year—First, Perfect Model, 454486, J. E. Meharry; second, Perfect Model 2nd, 454488, J. E. Meharry; third, Long Queen, 182786, E. M. Metzger; fourth, Ebnight, 454416, J. F. Leahy; fifth, Queen Bess, 453788, D. B. Rightmire; sixth, Lady Price Again, 453828, F. W. Akers; seventh, Lady Samson, 182790, E. M. Metzger.

Sow Under Six Months—First, Jessie's Pet, 452716, E. S. Barker; second, Miss May 1st, S. R. Reed; third, Gentle Jessie 2nd, 452718, E. S. Barker; fourth, Henry Lauer; fifth, D. B. Rightmire; sixth, F. G. Paul; seventh, Isaac Overton.

Senior Champion Boar—A. Model, 190713, S. A. Roberts.

Junior Champion Boar—Chief I Know, 191159, Chas. H. Krumm.

Senior Champion Sow—Louise Model, 443834, J. E. Meharry.

Junior Champion Sow—Perfect Model, 454486, J. E. Meharry.

Grand Champion Boar—A. Model, 190713, S. A. Roberts.

Grand Champion Sow—Louise Model, 443834, J. E. Meharry.

Boar and Three Sows Over One Year—First, J. E. Meharry; second, F. G. Paul; third, D. H. Paul; fourth, J. E. Meharry; fifth, M. H. Corey.

Boar and Three Sows Under One Year—First, J. E. Meharry; second, E. M. Metzger; third, J. F. Leahy; fourth, D. B. Rightmire; fifth, D. H. Paul; sixth, F. G. Paul.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, J. E. Meharry; second, D. H. Paul; third, M. H. Corey; fourth, J. E. Meharry.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, J. E. Meharry; second, E. M. Metzger; third, E. S. Barker; fourth, J. F. Leahy; fifth, D. B. Rightmire; sixth, D. H. Paul; seventh, F. G. Paul.

Get of Sire—First, J. E. Meharry; second, J. E. Meharry; third, Joe Kramer; fourth, E. M. Metzger; fifth, F. G. Paul; sixth, D. B. Rightmire; seventh, E. S. Barker.

Produce of Sow—First, J. E. Meharry; second, E. M. Metzger; third, E. S. Barker; fourth, D. B. Rightmire; fifth, Henry Lauer; sixth, W. Z. Swallow; seventh, D. H. Paul.

FUTURITIES.

JUDGE........................FRED L. ROOD, Clearfield, Iowa.

Boar Pigs—First, E. S. Barker; second, Henry Lauer; third, L. C. Burford; fourth, Henry Lauer; fifth, S. R. Reed; sixth, F. G. Paul; seventh, Henry Lauer; eighth, W. Z. Swallow.

Sow Pigs—First, E. S. Barker; second, S. R. Reed; third, E. S. Barker; fourth, Henry Lauer; fifth, D. B. Rightmire; sixth, F. G. Paul; seventh, W. Z. Swallow; eighth, D. H. Paul.

Four Pigs From One Litter—First, E. S. Barker; second, Henry Lauer; third, W. Z. Swallow; fourth, F. G. Paul; fifth, D. H. Paul; sixth, E. C. Wilson; seventh, J. S. Fawcett & Son; eighth, E. M. Metzger.

DUROC JERSEYS.

EXHIBITORS.

Geo. F. Abbott, Menlo, Iowa; F. H. Allen, Tobias, Nebraska; H. S. Allen, Russell, Iowa; A. P. Alsin, Boone, Iowa; L. Baker, Mingo, Iowa; Lester Barton, Blair, Nebraska; E. A. Bonham, Macksburg, Iowa; R. W. Brearly, Lake City, Iowa; H. I. Branson, West Branch, Iowa; H. E. Browning, Hersman, Illinois; Cooper & Wessel, Loraine, Illinois; Cotta and Williams, Galesburg, Illinois; M. C. Cramer & Son, Monroe, Iowa; E. W. Davis & Company, Glenwood, Missouri; C. M. Dewey, Shannon City, Iowa; H. H. Diers, St. Olaf, Iowa; H. S. Fain, Emmetsburg, Iowa; J. H. Farris, New Providence, Iowa; F. Fowler & Sons, Menlo, Iowa; S. P. Freed, Ames, Iowa; Geo. Gawley, Irwin, Iowa; J. E. Grant, Carlisle, Iowa; J. W. Ginstead, Jr., Mitchellville, Iowa; Hanks & Bishop, New London, Iowa; Harding R. J., Macedonia, Iowa; Myles Harkin, Pleasantville, Iowa; Reed Hawthorne, West Liberty, Iowa; Henninger & Adams, Geneseo, Ill.; F. H. Herring, Iowa City, Iowa; Hockett & Ashby, Manning, Iowa; Jno. Justice, Ankeny, Iowa; J. W. Kent, Auburn, Iowa; Kuper Bros., Bellevue, Iowa; Fred W. Lahr, Brooks, Iowa; P. B. Lake, Moscow, Iowa; A. E. Long, Mt. Pleasant, Iowa; Grant Lynn, Spirit Lake, Iowa; R. G. McDuff, Monroe, Iowa; J. W. McMichael, Carlisle, Iowa; B. C. Marts, Hampton, Iowa; E. D. Michael, Selma, Iowa; D. Nauman, West Liberty, Iowa; O. E. Osborn, Weston, Iowa; A. A. Pearson, Springdale, Iowa; W. M. Sells & Son, Indianola, Iowa; Arthur Spear, Wellman, Iowa; O. R. Stevens, Rippey, Iowa; S. Stewart & Sons, Kennard, Neb.; F. A. Strong, Orient, Iowa; John Thompson, Lake City, Iowa; C. O. Thornburg, Pleasantville, Iowa; Van Meter & Caldwell, Williamsville, Illinois; F. T. Van Nice, Russell, Iowa; Waltemeyer Bros., Mebourne, Iowa; C. A. Warrick, Blair, Nebraska; Grant White, Afton, Iowa; John Wellendorf, Algona, Iowa; Hosea Wilson, Blair, Nebraska; I. J. Wilson, West Branch, Iowa.

AWARDS.

JUDGE......................H. F. HOFFMAN, Washta, Iowa.

Boar Two Years or Over—First, Prince Educator, 100679, Cotta & Williams; second, Colonel Gano, 103963, R. J. Harding; third, Cedarhill Chief, 111545, Hosea Wilson; fourth, Crimson Chief Again, 119917,

H. S. Allen; fifth, Keep on Jim, 104151, J. H. Farris; sixth, Volunteer, 32899a, H. E. Browning; seventh, Crimson Monitor, 107369, C. A. Warrick.

Boar Eighteen Months, Under Two Years—First, High Model, 125953, Waltemeyer Bros.; second, Ames Colonel, 111091, Kuper Bros.; third, Defiance, 34523a, H. E. Browning; fourth, Munsey's Last, 126037, A. P. Alsin; fifth, Jumbo Medoc, 125903, Lester Barton; sixth, Wonderful Crimson Again, 111833, S. P. Freed; seventh, Hud's Hustler, Chas. Cooper.

Boar One Year, Under Eighteen Months—First, High Chief, 125963, Waltemeyer Bros.; second, Wonder's Model, 122481n, 41337a, Hanks & Bishop; third, Golden Model 30th, 125949, Waltemeyer Bros.; fourth, Crimson Model, 116101, Hockett & Ashby; fifth, O. E. Osborne; sixth, Helen's Model, 12598n, Hanks & Bishop; seventh, Proud Ohio Chief II, 117561, D. Nauman.

Boar Six Months, Under One Year—First, Chief Model, 125959, Waltemeyer Bros.; second, Golden Colonel, 125967, Waltemeyer Bros.; third, Sensation's Wonder, 125593, S. W. Stewart & Sons; fourth, Big Wonder, 125591, S. W. Stewart & Sons; fifth, Colonel S. E., Hockett & Ashby; sixth, Ohio Chief Colonel, 41303a, H. E. Browning; seventh, Proud Medium, 126033, R. J. Harding.

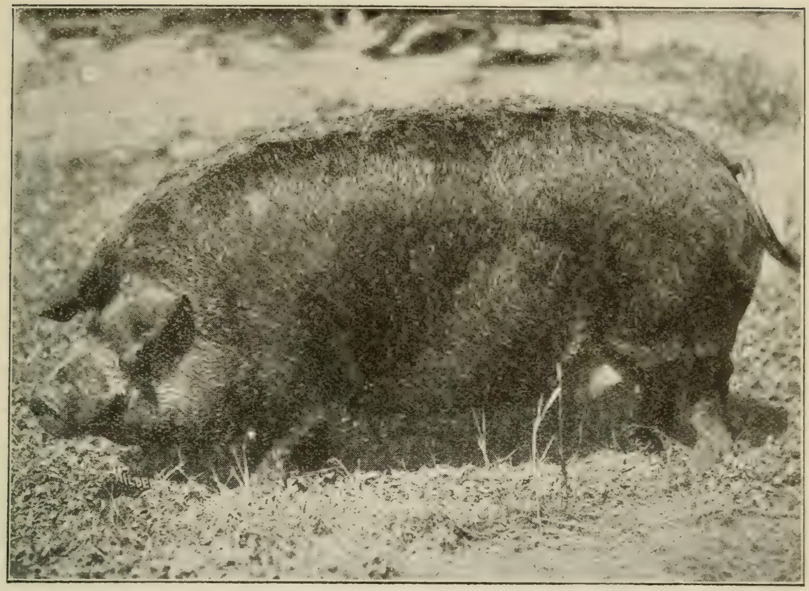
Boar Under Six Months—First, S. W. Stewart & Sons; second, Waltemeyer Bros.; third, Hosea Wilson; fourth, Waltemeyer Bros.; fifth, C. O. Thornburg; sixth, D. Nauman; seventh, Hockett & Ashby.

Sow Over Two Years—First, Chief's Maid, 212280, E. W. Davis & Co.; second, Happy Dream, 68640a, H. E. Browning; third, Ohio Queen, 239322, E. W. Davis & Co.; fourth, Mc's Dream, 195600n, H. E. Browning; fifth, Jewell's Model, 252034n, 94482a, Hanks & Bishop; sixth, Wonder Jewell, 281142, H. S. Allen; seventh, Lady Profit, 296484, Henninger and Adams.

Sow Eighteen Months, Under Two Years—First, Valley Lady Again, 318360, H. S. Allen; second, Goldie's Model, 291334, Hockett & Ashby; third, Nora Wonder, 290372, Geo. Gawley; fourth, Fancy Wonder 3rd, 289648, Waltemeyer Bros.; fifth, Protection Lady, 323992, R. J. Harding; sixth, Tattletale III, 86942a, H. E. Browning; seventh, Rose Lee, 324330, Van Meter & Caldwell.

Sow One Year, Under Eighteen Months—First, Belle's Model, 323856n, 94466a, Hanks & Bishop; second, Ohio Queen Again, 323828, Waltemeyer Bros.; third, Queen Wonder, 323826, Waltemeyer Bros.; fourth, Lee's Delight, 324332, Van Meter & Caldwell; fifth, Bessie Defender 2nd, Hockett & Ashby; sixth, Billy Burke, 94390a, H. E. Browning; seventh, Big Sady, 324032, B. C. Marts.

Sow Six Months, Under One Year—First, Crimson Lady, 324065, F. H. Allen; second, Wild Eyes, 323836, Waltemeyer Bros.; third, Golden Queen 22nd, 323840, Waltemeyer Bros.; fourth, Golden Floss, Hockett & Ashby; fifth, Lucille Model, 323848n, 94460a, Hanks & Bishop; sixth, Model Queen 15th, 324160, E. W. Davis & Co.; seventh, Golden Floss 2nd, Hockett & Ashby.



GRAND CHAMPION DUROC SOW
Iowa State Fair, 1912

Sow Under Six Months—First, Waltemeyer Bros.; second, S. W. Stewart & Sons; third, Lady Anna, S. W. Stewart & Sons; fourth, Waltemeyer Bros.; fifth, Hosea Wilson; sixth, T. F. Van Nice; seventh, Van Meter & Caldwell.

Senior Champion Boar—High Model, 125953, Waltemeyer Bros.

Junior Champion Boar—Chief Model, Waltemeyer Bros.

Senior Champion Sow—Chief Maid, 212280, E. W. Davis & Co.

Junior Champion Sow—Crimson Lady, 324065, F. H. Allen.

Grand Champion Boar—High Model, 125953, Waltemeyer Bros.

Grand Champion Sow—Chief's Maid, 212280, E. W. Davis & Co.

Boar and Three Sows Over One Year—First, Waltemeyer Bros.; second, Hanks & Bishop; third, H. E. Browning; fourth, R. J. Harding; fifth, H. E. Browning; sixth, Hockett & Ashby; seventh, Van Meter and Caldwell.

Boar and Three Sows Under One Year—First, Waltemeyer Bros.; second, Waltemeyer Bros.; third, F. H. Allen; fourth, E. W. Davis & Co.; fifth, S. W. Stewart & Sons; sixth, Hanks & Bishop; seventh, Hockett & Ashby.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, Waltemeyer Bros.; second, Hanks & Bishop; third, H. E. Browning; fourth, Van Meter & Caldwell; fifth, R. J. Harding; sixth, George Gawley; seventh, Hockett & Ashby.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, Waltemeyer Bros.; second, Waltemeyer Bros.; third, F. H. Allen; fourth, E. W. Davis & Co.; fifth, S. W. Stewart & Sons; sixth, Hanks & Bishop; seventh, Hockett & Ashby.

Get of Sire—First, Waltemeyer Bros.; second, Hanks & Bishop; third, Waltemeyer Bros.; fourth, S. W. Stewart & Sons; fifth, E. W. Davis & Co.; sixth, Hockett & Ashby; seventh, H. E. Browning.

Produce of Sow—First, Waltemeyer Bros.; second, S. W. Stewart & Sons; third, E. W. Davis & Co.; fourth, Hockett & Ashby; fifth, F. H. Allen; sixth, C. O. Thornburg; seventh, Chas. Cooper.

SPECIALS OFFERED BY THE NATIONAL DUROC JERSEY RECORD ASSOCIATION.

Boar and Three Sows Owned by Exhibitor—First, Waltemeyer Bros.; second, Hanks & Bishop; third, Ashby & Hockett.

SPECIALS OFFERED BY THE AMERICAN DUROC JERSEY SWINE BREEDERS' ASSOCIATION.

Best Herd Under One Year—First, Hanks & Bishop; second, R. J. Harding.

Best Herd One Year Old or Over, Bred and Owned by Exhibitor—First, Hanks & Bishop; second, H. E. Browning.

Best Herd Under One Year Old, Bred and Owned by Exhibitor—First, Hanks & Bishop; second, Van Meter & Caldwell.

CHESTER WHITE.

EXHIBITORS.

A. D. Andrews & Son, New London, Iowa; Barr & Rae, Ames, Iowa; B. M. Boyer & Sons, Farmington, Iowa; J. W. Brendel, Zionsville, Ind.; Reed Crawford, Libertyville, Iowa; Geo. W. DeBar, Aurora, Iowa; W. H. Dunbar, Jefferson, Iowa; F. O. Dunkerton, Dunkerton, Iowa; Thos. F. Kent, Walnut, Iowa; Geo. A. Lasley, Selma, Iowa; D. H. Lewis, Geneseo, Illinois; J. A. Loughridge, Delta, Iowa; M. McLaughlin, Nevada, Iowa; Will Michael, Selma, Iowa; E. L. Nagle, Deep River, Iowa; J. T. Perry, Selma, Iowa; F. E. Read & Son, Galena, Ill.; J. H. Sackmiller, Webster City, Iowa; Otto B. Schulze, Nashville, Michigan; W. W. Seeley, Stuart, Iowa; Patrick H. Sheridan, West Side, Iowa; A. B. Somerville, Monroe, Iowa; Arthur Spear, Wellman, Iowa; L. C. West, Dallas Center, Iowa; Wm. Whitted, Monroe, Iowa; G. H. Barber, Marble Rock, Iowa.

AWARDS.

JUDGE..........................N. H. GENTRY, Sedalia, Mo.

Boar Two Years or Over—First, Sweepstake, 28006, B. M. Boyer & Sons; second, Chickasaw Choice, 29161, Barr & Rae; third, Alright, 20139, Patrick H. Sheridan; fourth, Iowa Protection, 19551, Thos. F. Kent; fifth, Right Lad, 22023, D. H. Lewis; sixth, Mark, F. O. Dunkerton; seventh, Scott No. 1, Otto B. Schulze.

Boar One Year, Under Eighteen Months—First, Medler, 20925, W. H. Dunbar; second, Col. Evans, 21623, E. L. Nagle & Son; third, Modeler S, 19629, Arthur Spear; fourth, Combination A, 22045, Thos. F. Kent; fifth, B. & R. Model, 22077, Barr & Rae; sixth, Combination B, 22047, Thos. F. Kent; seventh, Chickasaw Lad, 19631, Arthur Spear.

Boar Six Months, Under One Year—First, Elmo King, 22029, D. H. Lewis; second, Elmo King, 2nd, 22031, D. H. Lewis; third, Fox, F. O. Dunkerton; fourth, Captain, 16445, E. L. Nagle & Son; fifth, Silver King O. K., Arthur Spear; sixth, Duke, 22011, A. D. Andrews & Son; seventh, Rivenur, 22079, Barr & Rae.

Boar Under Six Months—First, B. M. Boyer & Sons; second, Charmer 2nd, Will Michael; third, Teddy, 22025, D. H. Lewis; fourth, F. E. Read & Son; fifth, F. E. Read & Son; sixth, Wm. Whitted; seventh, Billy, F. O. Dunkerton.

Sow Two Years or Over—First, Lenora 3rd, 44512, Barr & Rae; second, Iowa Production, 45848, Thos. F. Kent; third, Mollie, 48842, D. H. Lewis; fourth, Iowa Bessie, 47666, Thos. F. Kent; fifth, White Rose, 48318, A. D. Andrews & Son; sixth, Alice, 24366, M. McLaughlin.

Sow Eighteen Months, Under Two Years—First, Kent's Kind, 48888, Thos. F. Kent; second, Ruby, 48844, D. H. Lewis; third, Grace E., 48868, W. H. Dunbar; fourth, Big Duchess, 44870, A. D. Andrews & Son; fifth, Mazie, 45640, Geo. A. Lasley.

Sow One Year, Under Eighteen Months—First, H. Lenora 2nd, 48866, W. H. Dunbar; second, Esther, 48846, D. H. Lewis; third, Iowa Aghnito, 48894, Thos. F. Kent; fourth, March Rose, 48946, Barr & Rae; fifth, Edith, 48848, D. H. Lewis; sixth, Juniata's 3rd, 31304, Arthur Spear; seventh, Neva, 48816, Geo. A. Lasley.

Sow Six Months, Under One Year—First, Midget, 27612, E. L. Nagle & Son; second, Elmo Queen 1st, 48858; third, Iowa Favorite, 48882; fourth, Elmo Queen 2nd, 48860, D. H. Lewis; fifth, Hiland Princess, 48950, Barr & Rae; sixth, Rowena O. K., Arthur Spear; seventh, Iowa Royal, 48880, Thos. F. Kent.

Sow Under Six Months—First, Snow Ball, E. L. Nagle & Son; second, Sister 1st, 48850, D. H. Lewis; third, Sister 2nd, 48852, D. H. Lewis; fourth, Barr & Rae; fifth, Fancy, E. L. Nagle & Son; sixth, W. H. Dunbar; seventh, W. H. Dunbar.

Senior Champion Boar—Sweepstake, 28006, B. M. Boyer.

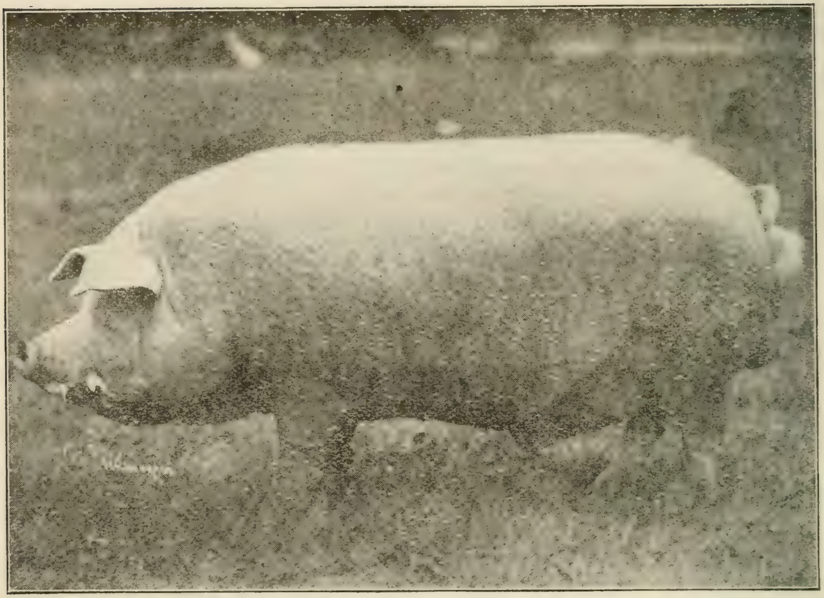
Junior Champion Boar—Elmo King, 22029, D. H. Lewis.

Senior Champion Sow—Lenora 3rd, Barr & Rae.

Junior Champion Sow—Midget, E. L. Nagle & Son.

Grand Champion Boar—Elmo King, 22029, D. H. Lewis.

Grand Champion Sow—Lenora 3rd, Barr & Rae.



CHAMPION CHESTER WHITE BOAR
Iowa State Fair, 1912

Boar and Three Sows Over One Year—First, White Boy, Thos. F. Kent; second, Chickasaw Choice, Barr & Rae; third, Right Lad, D. H. Lewis; fourth, Medler, W. H. Dunbar; fifth, St. Croix, A. D. Andrews & Son.

Boar and Three Sows Under One Year—First, Elmo King 1st, D. H. Lewis; second, Iowa Chief, Thos. F. Kent; third, Silver King, Arthur Spear; fourth, Elmo King 2nd. D. H. Lewis; fifth, Captain. E. L. Nagle & Son; sixth, Duke, A. D. Andrews & Son; seventh, Village Boy, Barr & Rae.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, Combination A., Thos. F. Kent; second, B. & A. Model, Barr & Rae; third, Right Lad, D. H. Lewis.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, D. H. Lewis; second, Thos. F. Kent; third, Arthur Spear; fourth, D. H. Lewis; fifth, E. L. Nagle & Son; sixth, A. D. Andrews & Son; seventh, Barr & Rae.

Get of Sire—First, D. H. Lewis; second, Thos. F. Kent; third, W. H. Dunbar; fourth, D. H. Lewis; fifth, Barr & Rae; sixth, E. L. Nagle & Son; seventh, Arthur Spear.

Produce of Sow—First, D. H. Lewis; second, D. H. Lewis; third, Thos. F. Kent; fourth, Barr & Rae; fifth, E. L. Nagle & Son; sixth, Arthur Spear; seventh, A. D. Andrews & Son.

SPECIALS OFFERED BY THE NATIONAL O. I. C. RECORDING CO.

Boar Under Six Months—First, Happy Boy, 2144, L. C. West.
Sow Under Six Months—First, Beauty, 2143, L. C. West.

SPECIALS OFFERED BY THE AMERICAN CHESTER WHITE RECORD ASSOCIATION.

Boar and Three Sows, Under One Year—First, Silver King, 19731, Ruth O. K., 31498, Rowena O. K., 31496, White Rose O. K., 31494, Arthur Spear.

Produce of Sow—First, Silver King, 19731, Ruth O. K., 31498, Rowena O. K., 31496, White Rose O. K., 31494, Arthur Spear.

BERKSHIRE.

EXHIBITORS.

C. A. Evans, Elliott, Iowa; Farmer Farm, Farmington, Minnesota; A. G. Forsbeck, Gray, Iowa; Iowana Farms, Davenport, Iowa; Forest S. McPherson, Stuart, Iowa; Rookwood Farm, Ames, Iowa; E. B. Thomas, Audubon, Iowa.

AWARDS.

JUDGE........................N. H. GENTRY, Sedalia, Mo.

Boar Two Years or Over—First, Rival's Champion's Best, 127963, Rookwood Farm; second, Julia's Duke, 112641, Farmer Farm; third, Masterpiece Rival 2nd, 137725, Iowana Farms; fourth, King Balder, 143671, A. G. Forsbeck; fifth, Master Pug 2nd, 134186, Iowana Farms; sixth, Sensation, 153959, Rookwood Farm; seventh, Premier's Master 5th, 146091, Farmer Farm.

Boar One Year, Under Eighteen Months—First, Laurel Champion, Rookwood Farm; second, Sunrise Attraction, 163581, Farmer Farm; third, Ames Rival 20th, 152781, Rookwood Farm; fourth, Sunrise Brilliant, 165282, Farmer Farm; fifth, Sittyton Rivaleer, 154400, Iowana Farms; sixth, Duke's Conqueror 2nd, 159246, C. A. Evans; seventh, Corrector's Best, C. A. Evans.

Boar Six Months, Under One Year—First, Robin's Baron Value, 165518, Farmer Farm; second, Rob Roy 10th, 166356, F. S. McPherson; third, Peerless Masterpiece, 166450, Iowana Farms; fourth, Corrector's Duke, 166988, C. A. Evans; fifth, Corrector's Tod, C. A. Evans.

Boar Under Six Months—First, Farmer Farm; second, Iowana Farms; third, Iowana Farms; fourth, A. G. Forsbeck; fifth, Farmer Farm; sixth, C. A. Evans.

Sow Two Years or Over—First, Robin's Girl, 132007, Iowana Farms; second, Rival's Black Girl 2nd, 137155, Iowana Farms; third, Robin's Corrector, 133968, Farmer Farm; fourth, Rookwood Lady 27th, 124276, Farmer Farm; fifth, Baroness Oxford B, 158384, A. G. Forsbeck; sixth, Young Amazing, 151807, C. A. Evans.

Sow Eighteen Months, Under Two Years—First, Value's Duchess 2nd, 152963, Iowana Farms; second, Model Gem 251st, 151803, C. A. Evans.

Sow One Year, Under Eighteen Months—First, Rival Lady 33rd, 152787, Rookwood Farm; second, Iowana Farms; third, Sunrise Attraction, 165577, Farmer Farm; fourth, Premier's Nora Lee 2nd, 157377, Iowana Farms; fifth, Black Rose Bud 3rd, 165562, A. G. Forsbeck; sixth, Rival Lady 34th, 152788, Rookwood Farm; seventh, Julia's Model Queen, 165576, Farmer Farm.

Sow Six Months, Under One Year—First, Robin's Baroness Value 3rd, 165579, Farmer Farm; second, Premier's Master Princess, 165582, Farmer Farm; third, Masterpiece Duchess, 161143, Iowana Farms; fourth, Lady Stuart 6th, 166357, F. S. McPherson; fifth, Lady Stewart 7th, 166358, F. S. McPherson; sixth, Corrector's Gem, 166991, C. A. Evans; seventh, Corrector's Gem 2nd, C. A. Evans.

Sow Under Six Months—First, A. G. Forsbeck; second, Farmer Farm; third, Iowana Farms; fourth, Iowana Farms; fifth, Farmer Farm; sixth, and seventh, C. A. Evans.

Senior Champion Boar—Rival's Champion Best, 127963, Rookwood Farm.

Junior Champion Boar—Farmer Farm.

Senior Champion Sow—Robin's Girl, 132007, Iowana Farms.

Junior Champion Sow—Robin's Baroness Value 3rd, Farmer Farm.

Grand Champion Boar—Rival's Champion Best, 127963, Rookwood Farm.

Grand Champion Sow—Robin's Girl, Iowana Farms.

Boar and Three Sows Over One Year—First, Rookwood Farm; second, Iowana Farm; third, Farmer Farm; fourth, C. A. Evans.

Boar and Three Sows Under One Year—First, Farmer Farm; second, F. S. McPherson; third, Iowana Farms; fourth, C. A. Evans.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, Rookwood Farm; second, Farmer Farm; third, C. A. Evans.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, Farmer Farm; second, F. S. McPherson; third, Iowana Farms; fourth, C. A. Evans.

Get of Sire—First, Rookwood Farm; second, Farmer Farm; third, F. S. McPherson; fourth, Iowana Farms; fifth, C. A. Evans.

Produce of Sow—First, Rookwood Farm; second, Farmer Farm; third, F. S. McPherson; fourth, Iowana Farms; fifth, C. A. Evans.

SPECIALS OFFERED BY THE AMERICAN BERKSHIRE ASSOCIATION.

Best Herd—F. S. McPherson.

HAMPSHIRE.

EXHIBITORS.

J. E. Beckendorf, Walnut, Iowa; W. J. Brinigar, Blythedale, Mo.; C. A. Brook, Washington, Iowa; Willis O. Chaney, Eldora, Iowa; Willie Essig, Tipton, Indiana; James Perry Co., Sciota, Illinois; E. S. McCandless, Thurman, Iowa; Isom Martin, Lancaster, Missouri; Maxwell & Spangler, Creston, Iowa; Clayton Messenger, Keswick, Iowa; J. H. Nissen, Lyons, Iowa; F. T. Quire, Sully, Iowa; D. E. Strever, Hinckley, Illinois; Mike Sharp & Son, Coal Valley, Illinois; F. O. Tanner, Brownsdale, Minnesota.

AWARDS.

JUDGE......................A. L. GOODENOUGH, Morrison, Ill.

Boar Two Years or Over—First, Messenger Boy, 6179, Clayton Messenger; second, Compeer, 4779, Willie Essig; third, Lad for Me, 4685, J. E. Beckendorf; fourth, General Tipton, 1677, Isom Martin; fifth, Blythedale Duke 2nd, 7021, W. J. Brinigar; sixth, Clare's Duke, 3773, Mike Sharp & Sons; seventh, Signet, 5453, E. S. McCandless.

Boar Eighteen Months, Under Two Years—First, Dr. Scott, 6177, Willie Essig; second, Round-up, 7419, Mike Sharp & Sons; third, Byrdine Carter, 7185, W. J. Brinigar; fourth, Flunky Tom, 8413, Clayton Messenger; fifth, Mike, 7411, Mike Sharp & Sons; sixth, Jack Johnson, 9963, Clayton Messenger.

Boar One Year, Under Eighteen Months—First, Dudie, 7847, Willie Essig; second, Max Welton, 7969, Harry C. James; third, Joe, 7743, J. H. Nissen; fourth, Fred K., 7911, Clayton Messenger; fifth, Blythedale Lad, 7273, W. J. Brinigar; sixth, Buster, 10793, Mike Sharp & Sons; seventh, King of Sciota, 8099, Harry C. James.

Boar Six Months, Under One Year—First, Direct View, 11001, Willie Essig; second, Silko, 11003, Willie Essig; third, Allen's Colonel, 11073, J. H. Nissen; fourth, Teddy B. 2nd, 10327, W. J. Brinigar; fifth, Harry, 10839, Mike Sharp & Sons; sixth, Twister's Duke, 11059, J. H. Nissen; seventh, Supervisor, 10553, Clayton Messenger.

Boar Under Six Months—First, Shanker, 10817, Mike Sharp & Sons; second, Brookview Prince, 11155, Isom Martin; third, Bonnie, 10819, Mike Sharp & Sons; fourth, Lad for Me 2nd, 10953, J. E. Beckendorf; fifth, Captain Stacy, 11159, Isom Martin; sixth, Willie Essig; seventh, Corn Carne, 10557, Clayton Messenger.

Sow Two Years or Over—First, Goldie, 8896, Mike Sharp & Sons; second, Sylvia, 2398, Clayton Messenger; third, Utility Lass, 9578, Willie Essig; fourth, Blythedale Princess, 5266, W. J. Brinigar; fifth, Clinton's Best, 7184, J. H. Nissen; sixth, Pearl's Choice, 12870, Willie Essig; seventh, Minn. Lady 2nd, 2588, F. O. Tanner.

Sow Eighteen Months, Under Two Years—First, Missouri's Best, 13058, W. J. Brinigar; second, Bertha, 13178, Mike Sharp & Sons; third, Deepness, 17436, Willie Essig; fourth, Dependence, 13900, Willie Essig;

fifth, Cora, 13180, Mike Sharp & Sons; sixth, Missouri Beauty, 13056, W. J. Brinigar; seventh Estell, 13336, Clayton Messenger.

Sow One Year, Under Eighteen Months—First, Mayflower, 16616, Mike Sharp & Sons; second, Pretty, 13052, W. J. Brinigar; third, Progress, 13960, Willie Essig; fourth, Miss Scott, 13672, Clayton Messenger; fifth, Princess, 16620, Mike Sharp & Sons; sixth, Security, 13927, Willie Essig; seventh, Miss Allen 14876, C. A. Brook.

Sow Six Months, Under One Year—First, Veda, 19640, Willie Essig; second, Wild Rose, 18998, Clayton Messenger; third, Miss Naylor, 18996, Clayton Messenger; fourth, Maud's Best 3rd, 18590, W. J. Brinigar; fifth, Edna, 19914, C. A. Brook; sixth, Nellie, 19372, Mike Sharp & Sons; seventh, Tip Top Girl, 19538, F. T. Quire.

Sow Under Six Months—First, Daisy Brookview 1st, 19954, Isom Martin; second, Sadie, 19352, Mike Sharp & Son; third, Orphan Ann, 19960, Isom Martin; fourth, Sweet Evlyn, 19554, J. E. Beckendorf; fifth, Mary, 19350, Mike Sharp & Son; sixth, Countess Perfection, 19808, J. H. Nissen; seventh, W. J. Brinigar.

Senior Champion Boar—Messenger Boy, 6179, Clayton Messenger.

Junior Champion Boar—Direct View, 11001, Willie Essig.

Senior Champion Sow—Goldie, 8896, Mike Sharp & Sons.

Junior Champion Sow—Veda, 19640, Willie Essig.

Grand Champion Boar—Messenger Boy, 6179, Clayton Messenger.

Grand Champion Sow—Goldie, 8896, Mike Sharp & Sons.

Boar and Three Sows Over One Year—First, Mike Sharp & Sons; second, Clayton Messenger; third, Willie Essig; fourth, Willie Essig; fifth, W. J. Brinigar; sixth, J. H. Nissen; seventh, Mike Sharp & Sons.

Boar and Three Sows Under One Year—First, Willie Essig; second, Mike Sharp & Sons; third, J. H. Nissen; fourth, W. J. Brinigar; fifth, Mike Sharp & Sons; sixth, C. A. Brook; seventh, F. T. Quire.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, Mike Sharp & Sons; second, Willie Essig; third, W. J. Brinigar; fourth, J. H. Nissen; fifth, Mike Sharp & Sons; sixth, Clayton Messenger; seventh, C. A. Brook.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, Willie Essig; second, Isom Martin; third, Mike Sharp & Sons; fourth, J. H. Nissen; fifth, W. J. Brinigar; sixth, Mike Sharp & Sons; seventh, C. A. Brook.

Get of Sire—First, Willie Essig; second, Mike Sharp & Sons; third, W. J. Brinigar; fourth, Isom Martin; fifth, Mike Sharp & Sons; sixth, Clayton Messenger; seventh, J. H. Nissen.

Produce of Sow—First, Willie Essig; second, Mike Sharp & Sons; third, Isom Martin; fourth, Mike Sharp & Son; fifth, Clayton Messenger; sixth, J. H. Nissen; seventh, J. H. Nissen.

SPECIAL OFFERED BY THE AMERICAN HAMPSHIRE SWINE RECORD ASSOCIATION.

Best Exhibit Four Hampshire Pigs—First, F. T. Quire; second, C. A. Brook; third, Clayton Messenger.

YORKSHIRE.

EXHIBITORS.

F. M. Buck, LaPorte, Indiana; B. F. Kunkle, Redfield, Iowa.

AWARDS.

JUDGE............................C. C. ROUP, Kalona, Iowa.

Boar Two Years or Over—First, Lake Park Navigator, 12161, B. F. Kunkle; second, Deer Creek Beauty 2nd, 10262, F. M. Buck; third, Deer Creek Dalmany 9th, 13316, B. F. Kunkle.

Boar Eighteen Months, Under Two Years—First, Prairie Lea Pride, 15085, F. M. Buck.

Boar One Year, Under Eighteen Months—First, Oak Grove Rex 3rd, 15700, B. F. Kunkle; second, Oak Grove Bill 3rd, 15698, B. F. Kunkle; third, Prairie Gem Joker, 16038, F. M. Buck; fourth, Prairie Lea Joker, 16038, F. M. Buck.

Boar Six Months, Under One Year—First, Lake Park Dude, 16588, F. M. Buck; second, Oak Grove Royal 2nd, 16412, B. F. Kunkle.

Boar Under Six Months—First, Rex Fifth, B. F. Kunkle; second, F. M. Buck; third, Rex Smith, B. F. Kunkle; fourth, F. M. Buck.

Sow Two Years or Over—First, Oak Grove Maud 2nd, 14506, B. F. Kunkle; second, Oak Grove Maud 3rd, 14930, B. F. Kunkle; third, Prairie Gem, 12679, F. M. Buck; fourth, Gem of the Lea, 14268, F. M. Buck.

Sow Eighteen Months, Under Two Years—First, Oak Grove Bell First, 14476, B. F. Kunkle; second, Oak Grove Bell 2nd, 14477, B. F. Kunkle; third, Mondamin Gem, 15086, F. M. Buck.

Sow One Year, Under Eighteen Months—First, Deer Creek Martha 5th, 14977, B. F. Kunkle; second, Oak Grove Bell 5th, 14536, B. F. Kunkle; third, Prairie Gem 3rd, 16037, F. M. Buck; fourth, Prairie Gem 2nd, 16036, F. M. Buck.

Sow Six Months, Under One Year—First, Lake Park Augustine, III, 16587, F. M. Buck; second, Oak Grove Model 4th, 16410, B. F. Kunkle; third, Oak Grove Model 5th, 16409, B. F. Kunkle.

Sow Under Six Months—First, F. M. Buck; second, F. M. Buck; third and fourth, B. F. Kunkle.

Senior Champion Boar—Lake Park Navigator, 12161, B. F. Kunkle.

Junior Champion Boar—Lake Park Dude, 16588, F. M. Buck.

Senior Champion Sow—Deer Creek Martha 5th, 14977, B. F. Kunkle.

Junior Champion Sow—Lake Park Augustine III, 16587, F. M. Buck.

Grand Champion Boar—Lake Park Navigator, 12161, B. F. Kunkle.

Grand Champion Sow—Deer Creek Martha 5th, 14977, B. F. Kunkle.

Boar and Three Sows Over One Year—First, B. F. Kunkle; second, F. M. Buck.

Boar and Three Sows Under One Year—First, F. M. Buck; second, B. F. Kunkle.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, B. F. Kunkle; second, F. M. Buck.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, B. F. Kunkle; second, F. M. Buck.

Get of Sire—First, B. F. Kunkle; second, F. M. Buck.

Produce of Sow—First, B. F. Kunkle; second, F. M. Buck.

SPECIALS OFFERED BY THE AMERICAN YORKSHIRE CLUB.

Young Herd—First, B. F. Kunkle; second F. M. Buck.

TAMWORTH.

EXHIBITOR.

Warren W. Morton, Russellville, Kentucky.

AWARDS.

JUDGE............................C. C. ROUP, Kalona, Iowa.

Boar Two Years or Over—First, Iowa Chief, 6968.

Boar Eighteen Months, Under Two Years—First, Mountain's Home Golden Star, 9796.

Boar Six Months, Under One Year—First, Mountain Home Hero, IV, 9803; second, Rosaillen Chief, 9802.

Boar Under Six Months—First, Kentucky Chief II, 9812; second, Glenary Chief, 9813.

Sow Two Years or Over—First, Red Beauty, 8703; second, Maplehurst Golden Gleam, 9702.

Sow Eighteen Months, Under Two Years—First, Mountain Home Mildred Queen, 9795.

Sow One Year, Under Eighteen Months—First, Bowery Belle, 8658.

Sow Six Months, Under One Year—First, Rosaillon Queen, 9801; second, The Rambler, 9800.

Sow Under Six Months—First, Prolific, 9810; second, Patsy, 9811.

Senior Champion Boar—Iowa Chief, 6968.

Junior Champion Boar—Mountain Home Hero 4th, 9803.

Senior Champion Sow—Red Beauty, 8703.

Junior Champion Sow—Rosaillon Queen, 9801.

Grand Champion Boar—Iowa Chief, 6968.

Grand Champion Sow—Red Beauty, 8703.

Boar and Three Sows Over One Year—First.

Boar and Three Sows Under One Year—First.

Boar and Three Sows Under One Year, Bred by Exhibitor—First.

Get of Sire—First.

Produce of Sow—First.

SPECIAL PRIZE OFFERED BY THE AMERICAN TAMWORTH RECORD ASSOCIATION.

Boar and Three Sows Under One Year—First.

SHEEP DEPARTMENT.

SUPERINTENDENT................J. F. SUMMERS, Malvern, Ia.

MERINOS, AMERICAN, SPANISH OR DELAINE.

EXHIBITORS.

A. J. Blakely, Grinnell, Iowa; F. W. Cook, West Mansfield, Ohio; S. Rail & Sons, Birmingham, Iowa.

AWARDS.

JUDGE........................R. F. MILLER, Bozeman, Mont.

Ram Two Years Old or Over—First, F. W. Cook; second, S. Rail & Son; third, A. J. Blakely.

Ram One Year Old and Under Two—First, F. W. Cook; second, A. J. Blakely; third, S. Rail & Son.

Ram Lamb—First and second, F. W. Cook; third, S. Rail & Son.

Ewe Two Years Old or Over—First, A. J. Blakely; second, F. W. Cook; third, S. Rail & Son.

Ewe One Year Old and Under Two—First and second, F. W. Cook; third, S. Rail & Son.

Ewe Lamb—First, A. J. Blakely; second, F. W. Cook; third, S. Rail & Son.

Champion Ram, Any Age—F. W. Cook.

Champion Ewe, Any Age—F. W. Cook.

Get of Sire—F. W. Cook; second, S. Rail & Son; third, A. J. Blakely.

Flock—First, F. W. Cook; second, A. J. Blakely; third, S. Rail & Son.

IOWA SPECIALS.

Ram Two Years Old or Over—First, A. J. Blakely; second and third, S. Rail & Son.

Ram One Year Old and Under Two—First, A. J. Blakely; second and third, S. Rail & Son.

Ram Lamb—First and second, S. Rail & Son; third, A. J. Blakely.

Ewe Two Years Old or Over—First and second, S. Rail & Son.

Ewe One Year Old and Under Two—First and second, S. Rail & Son; third, A. J. Blakely.

Ewe Lamb—First and second, S. Rail & Son; third, A. J. Blakely.

Champion Ram, Any Age—A. J. Blakely.

Champion Ewe, Any Age—S. Rail & Son.

Get of Sire—First, S. Rail & Son; second, A. J. Blakely.

Flock—First, A. J. Blakely; second, S. Rail & Son.

RAMBOUILLET.

EXHIBITORS.

F. W. Cook, West Mansfield, Ohio; F. S. King Bros. Company, Laramie, Wyo.; J. K. Scott & Co., Mt. Sterling, Ohio.

AWARDS.

JUDGE........................R. F. MILLER, Bozeman, Mont.

Ram Two Years Old or Over—First, Wyoming Boy, FSK 195, 52084, F. S. King Bros. Co.; second, King's Chief, 68244, F. S. King Bros. Co.; third, F. W. Cook.

Ram One Year Old and Under Two—First, and third. F. W. Cook; second, Dandy, 64625, F. S. King Bros. Co.

Ram Lamb—First, Jack, 68248, F. S. King Bros. Co.; second, J. K. Scott & Co.; third, F. W. Cook.

Ewe Two Years Old or Over—First, Lady Betty, 57816, F. S. King Bros. Co.; second, Jean, 59716, F. S. King Bros. Co.; third, F. W. Cook.

Ewe One Year Old and Under Two—First, F. S. K., 464, 64621, F. S. King Bros. Co.; second, J. K. Scott & Co.; third, F. S. K., 441, 64618, F. W. King Bros. Co.

Ewe Lamb—First and third, F. W. Cook; second, F. S. K., 866, 68243, F. S. King Bros. Co.

Champion Ram, Any Age—King Bros.

Champion Ewe, Any Age—King Bros.

Get of Sire—First, F. S. King Bros. Co.; second, F. W. Cook; third, J. K. Scott & Co.

Flock—First, F. S. King Bros. Co.; second, F. W. Cook; third, J. K. Scott & Co.

COTSWOLD.

EXHIBITORS.

Alex W. Arnold, Galesville, Wis.; F. W. Harding, Waukesha, Wis.; Lewis Bros., Camp Point, Illinois; Joy Lewis, Camp Point, Ill.

AWARDS.

JUDGE........................R. F. MILLER, Bozeman, Mont.

Ram Two Years Old or Over—First and second, F. W. Harding.
Ram One Year Old and Under Two—First, and second, F. W. Harding.
Ram Lamb—First and second, F. W. Harding.
Ewe Two Years Old or Over—First and second, F. W. Harding.
Ewe One Year Old and Under Two—First and second, F. W. Harding.
Ewe Lamb—First and second, F. W. Harding.
Champion Ram, Any Age—F. W. Harding.
Champion Ewe, Any Age—F. W. Harding.
Get of Sire—First, F. W. Harding.
Flock—F. W. Harding.

LINCOLN.

EXHIBITOR.

Alex W. Arnold, Galesville, Wis.

AWARDS.

JUDGE........................R. F. MILLER, Bozeman, Mont.

Ram Two Years or Over—First and second.
Ram One Year Old and Under Two—First and second.
Ram Lamb—First and second.
Ewe Two Years Old or Over—First and second.
Ewe One Year Old and Under Two—First and second.
Ewe Lamb—First and second.
Champion Ram, Any Age—First.
Champion Ewe, Any Age—First.
Get of Sire—First.
Flock—First.

HAMPSHIRE DOWNS.

EXHIBITORS.

Alex W. Arnold, Galesville, Wisconsin; George McKerrow & Sons Co., Pewaukee, Wisconsin; Walnut Hall Farm, Donerail, Kentucky.

AWARDS.

JUDGE........................J. C. DUNCAN, Lewiston, N. Y.

Ram Two Years Old or Over—First, Harkness, 11389, Walnut Hall Farm; second, Alex W. Arnold; third, Harkness, 11499, Walnut Hall Farm.

Ram One Year Old and Under Two—First, Harkness, 11305, Walnut Hall Farm; second, Cholderton, 2226, 11697, Geo. McKerrow & Sons Co.; third, Harkness, 11406, Walnut Hall Farm; fourth, Alex W. Arnold.

Ram Lamb—First, Harkness, 12813, Walnut Hall Farm; second, Harkness, 12709, Walnut Hall Farm; third, Alex W. Arnold.

Ewe Two Years Old or Over—First, Harkness, 344, 25777, Walnut Hall Farm; second, Cholderton, 800, 28059, Geo. McKerrow & Sons Co.; third, Dogdear, 2526, 24400, Walnut Hall Farm; fourth, Bowery Lady, 2235, 28062, Geo. McKerrow & Sons Co.

Ewe One Year Old and Under Two—First, Harkness, 30527, Walnut Hall Farm; second, Harkness, 30542, Walnut Hall Farm; third, Sutton, 28064, Geo. McKerrow & Sons Co.; fourth, Alex W. Arnold.

Ewe Lamb—First, Walnut Hall Farm; second, Walnut Hall Farm; third, Geo. McKerrow & Sons Co.; fourth, Alex W. Arnold.

Champion Ram, Any Age—Walnut Hall Farm.

Champion Ewe, Any Age—Walnut Hall Farm.

Get of Sire—First, Walnut Hall Farm; second, Alex W. Arnold.

Flock—First, Walnut Hall Farm; second, Geo. McKerrow & Sons Co.; third, Alex W. Arnold.

SHROPSHIRES.

EXHIBITORS.

E. L. Bitterman, Mason City, Iowa; C. C. Croxen, Atalissa, Iowa; Chandler Bros., Chariton, Iowa; Harry Eddingfield, Mt. Pleasant, Iowa; J. S. Fawcett & Son, Springdale, Iowa; F. W. Harding, Waukesha, Wis.; Harris Logan & Sons, Hillsboro, Iowa; Geo. McKerrow & Sons Co., Pewaukee, Wis.; O. S. Peasley & Sons, Indianola, Iowa; R. & W. Postle, Camp Chase, Ohio; J. A. Taylor, Ames, Iowa; W. A. Taylor & Son, Ames, Iowa; C. J. Wilkinson, Colfax, Iowa.

AWARDS.

JUDGE........................J. C. DUNCAN, Lewiston, N. Y.

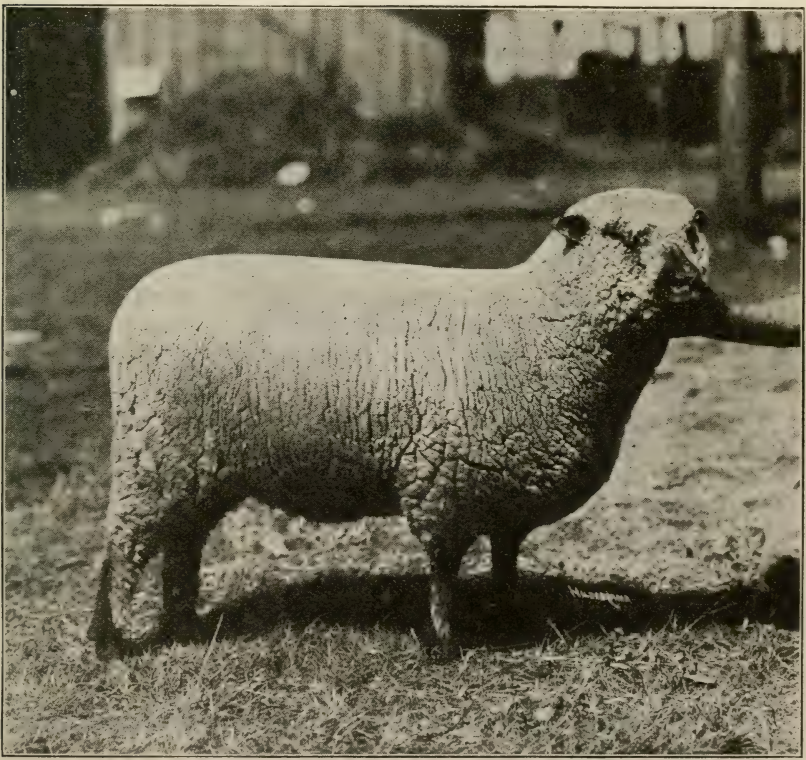
Ram Two Years or Over—First, McKerrow's Duke, 72, 344156, Geo. McKerrow & Sons Co.; second, The Conqueror, 343936, Geo. McKerrow & Sons Co.; third, Shield's 283, 278624, R. & W. Postle; fourth, Maple Grove Prosperity, 322041, W. A. Taylor & Son; fifth, Maple Grove Swell, 322039, W. A. Taylor & Son.

Ram One Year Old and Under Two—First, McK's Prince Imperial, 361689, Geo. McKerrow & Sons Co.; second, F. W. Harding; third, McK's Better Yet, 344654, Geo. McKerrow & Sons Co.; fourth, Fawcett's 266, 362384, J. S. Fawcett & Son; fifth, Maple Grove Governor, 342441, W. A. Taylor & Son.

Ram Lamb—First, East View's Shannak, 360850, E. L. Bitterman; second, McKerrow's 2636, Geo. McKerrow & Sons Co.; third, F. W. Harding; fourth, W. A. Taylor; fifth, O. H. Peasley & Son.

Ewe Two Years Old or Over—First, Buttar's 627, 345314, Geo. McKerrow & Sons Co.; second, McK's Milnes 72, 343908, Geo. McKerrow & Sons Co.; third, McKerrow's 1950, 322888, R. & W. Postle; fourth, F. W. Harding; fifth, Fawcett's 234, 322419, J. S. Fawcett & Son.

Ewe One Year Old and Under Two—First, McKerrow's 2310, 344658, Geo. McKerrow & Sons Co.; second, Mrs. Inge's 36, 343916, Geo. McKerrow & Sons Co.; third, F. W. Harding; fourth, Campbell, 1882, 361432, R. & W. Postle; fifth, Fawcett's 251, 350250, J. S. Fawcett & Son.



CHAMPION SHROPSHIRE EWE
Iowa State Fair, 1912

Ewe Lamb—First, East View's Dow's, 360847, E. L. Bitterman; second, East View's Dimple, 360846, E. L. Bitterman; third, McKerrow's, 2670, Geo. McKerrow & Sons Co.; fourth, F. W. Harding; fifth, R. & W. Postle.

Champion Ram, Any Age—Geo. McKerrow & Sons Co.

Champion Ewe Any Age—Geo. McKerrow & Sons Co.

Get of Sire—First, E. L. Bitterman; second, F. S. Fawcett & Son; third, W. A. Taylor & Son; fourth, O. H. Peasley.

Flock—First, Geo. McKerrow & Sons Co.; second, R. & W. Postle; third, F. W. Harding; fourth, W. A. Taylor & Son.

IOWA SHROPSHIRE SPECIALS.

Ram Two Years Old or Over—First, Maple Grove Prosperity, 322041, W. A. Taylor; second, East View's Coupon, 342417, E. L. Bitterman; third, O. H. Peasley & Son; fourth, East View's Such, 342414, E. L. Bitterman; fifth, Eddingfield 34, 357955, Harry Eddingfield.

Ram One Year Old and Under Two—First, Eddingfield 54, 361470, Harry A. Eddingfield; second, Fawcett's 243 368324, J. S. Fawcett & Son; third, East View's Duke, 342403, E. L. Bitterman; fourth, East View's Knight, 342832, E. L. Bitterman; fifth, Fawcett's 265, 343053, J. S. Fawcett & Son.

Ram Lamb—First, W. A. Taylor & Son; second, Eddingfield, 103, 361475, Harry Eddingfield; third, O. H. Peasley & Son; fourth, J. S. Fawcett & Sons; fifth, East View's Mark, 360851, E. L. Bitterman.

Ewe Two Years Old or Over—First, Fawcett's, 234, 322419, J. S. Fawcett & Son; second, East View's, 440, 347972, E. L. Bitterman; third, O. H. Peasley & Son; fourth, Maple Grove 9th, 298814, W. A. Taylor & Son; fifth, O. H. Peasley & Son.

Ewe One Year Old and Under Two—First, Eddingfield 51, 361468, Harry Eddingfield; second, East View's 512, 360854, E. L. Bitterman; third, Fawcett's 251, 362381, J. S. Fawcett & Son; fourth, Fawcett's 253, 362382, J. S. Fawcett & Son; fifth, Harris M. Logan & Son.

Ewe Lamb—First, East View's Dimple, 360846, E. L. Bitterman; second, and fourth, J. S. Fawcett & Son; third, East View's Dew Drop, 360848, E. L. Bitterman; fifth, Eddingfield 100, 361472, Harry A. Eddingfield.

Champion Ram, Any Age—Harry A. Eddingfield.

Champion Ewe, Any Age—E. L. Bitterman.

Get of Sire—First, J. S. Fawcett & Son; second, E. L. Bitterman; third, W. A. Taylor & Son; fourth, O. H. Peasley & Sons.

Flock—First, E. L. Bitterman; second, J. S. Fawcett & Son; third, Harry A. Eddingfield; fourth, O. H. Peasley & Sons.

SPECIALS OFFERED BY THE AMERICAN SHROPSHIRE REGISTRY ASSOCIATION.

Ram Two Years Old or Over—First, Maple Grove Prosperity, 322041, W. A. Taylor & Son; second, East View's Coupon, 342417, E. L. Bitterman; third, O. H. Peasley & Son.

Ram One Year Old and Under Two—First, Fawcett's 266, 362384, J. S. Fawcett & Son; second, Eddingfield 59, 361470, Harry Eddingfield; third, East View's 9th, 342832, E. L. Bitterman; fourth, Maple Grove Governor, 342441, W. A. Taylor & Son.

Ram Lamb—First, East View's Shamrock, 360850, E. L. Bitterman; second, W. A. Taylor & Son; third, J. S. Fawcett & Son; fourth, J. A. Taylor.

Ewe Two Years Old or Over—First, Fawcett's 234, 322419, J. S. Fawcett & Son; second, and third, O. H. Peasley & Son.

Ewe One Year Old and Under Two—First, Eddingfield 51, 361468, H. D. Eddingfield; second, 361403, H. M. Logan & Son; third, East View's 512, 360854, E. L. Bitterman.

Ewe Lamb—First and second, E. L. Bitterman; third, J. S. Fawcett & Son.

Champion Ram Any Age—East View's Shamrock, 360850.

Champion Ewe Any Age—E. L. Bitterman.

Get of Sire—First, E. L. Bitterman; second, J. S. Fawcett & Son; third, W. A. Taylor & Son; fourth, O. H. Peasley & Son.

Flock—First, E. L. Bitterman; second, J. S. Fawcett & Son; third, W. A. Taylor & Son.

OXFORD DOWNS.

EXHIBITORS.

C. C. Croxen, Atalissa, Iowa; John Graham & Son, Eldora, Iowa; C. S. Hechtner, Chariton, Iowa; Geo. McKerrow & Sons Co., Pewaukee, Wisconsin.

AWARDS.

JUDGE........................J. C. DUNCAN, Lewiston, N. Y.

Ram Two Years Old or Over—First, Cowley U. S. A. 1st, 53726, Geo. McKerrow & Sons Co.; second, Cowley U. S. A. 14th, 58542, Geo. McKerrow & Sons Co.; third and fourth, C. S. Hechtner.

Ram One Year Old and Under Two—First, McK's Jeffrey 44, 58593, Geo. McKerrow & Sons Co.; second, McK's Masterpiece, Geo. McKerrow & Sons Co.; third, C. S. Hechtner; fourth, C. C. Croxen.

Ram Lamb—First, McKerrow's 2638, Geo. McKerrow & Sons Co.; second and third, C. C. Croxen; fourth, John Graham & Son.

Ewe Two Year Old or Over—First, McKerrow's 1910, 54486, Geo. McKerrow & Sons Co.; second, C. S. Hechtner; third, McK's Heroine, 58641, Geo. McKerrow & Sons Co.; fourth, C. C. Croxen.

Ewe One Year Old and Under Two—First, Adam's 141 of 1911, 58553, Geo. McKerrow & Sons Co.; second, Wadley Lady 79, 58436, Geo. McKerrow & Sons Co.; third, C. S. Hechtner; fourth, C. C. Croxen.

Ewe Lamb—First, McKerrow's 2640, Geo. McKerrow & Sons Co.; second, and third, Jno. Graham & Son; fourth, C. C. Croxen.

Champion Ram Any Age—Geo. McKerrow & Sons Co.

Champion Ewe Any Age—Geo. McKerrow & Sons Co.

Get of Sire—First, C. C. Croxen; second, Jno. Graham & Son.

Flock—First, Geo. McKerrow & Sons Co.; second, C. S. Hechtner; third, C. C. Croxen; fourth, Jno. Graham & Son.

IOWA OXFORD SPECIALS.

Ram Two Years Old or Over—First, C. S. Hechtner; second, C. C. Croxen; third and fourth, Jno. Graham & Son.

Ram One Year and Under Two—First, C. S. Hechtner; second and fourth, C. C. Croxen; third, Jno. Graham & Son.

Ram Lamb—First and second, C. C. Croxen; third and fourth, Jno. Graham & Son.

Ewe Two Years Old or Over—First, C. S. Hechtner; second and fourth, C. C. Croxen; third and fifth, Jno. Graham & Son.

Ewe One Year Old and Under Two—First, C. S. Hechtner; second and third, C. C. Croxen; fourth, Jno. Graham & Son.

Ewe Lamb—First and second, Jno. Graham & Son; third, C. C. Croxen; fourth, C. S. Hechtner.

Champion Ram, Any Age—C. S. Hechtner.

Champion Ewe, Any Age—C. S. Hechtner.

Get of Sire—First, Jno. Graham & Son; second, C. C. Croxen.

Flock—First, C. S. Hechtner; second, C. C. Croxen; third, Jno. Graham & Son.

SOUTH DOWN.

EXHIBITORS.

Alex W. Arnold, Galesville, Wisconsin; T. D. Postle, Camp Chase, Ohio.

AWARDS.

JUDGE........................J. C. DUNCAN, Lewiston, N. Y.

Ram Two Years Old or Over—First, Alex W. Arnold; second, Leet 526, 24923, T. D. Postle.

Ram One Year Old and Under Two—First, Alex W. Arnold.

Ram Lamb—First, Broadway, 28983, T. D. Postle; second and fourth, Alex W. Arnold; third, Twister, 28998, T. D. Postle.

Ewe Two Years Old or Over—First, Angie R., 26259, T. D. Postle; second, Alex W. Arnold.

Ewe One Year Old and Under Two—First, Alex W. Arnold.

Ewe Lamb—First and third, Alex Arnold; second, May Day, 28999, T. D. Postle; fourth, Queene, 29000, T. D. Postle.

Champion Ram Any Age—First Broadway, 28983, T. D. Postle.

Champion Ewe Any Age—T. D. Postle.

Get of Sire—First, T. D. Postle; second, Alex W. Arnold.

Flock—First, Alex W. Arnold.

DORSET.

EXHIBITORS.

Alex W. Arnold, Galesville, Wisconsin; F. W. Harding, Waukesha, Wisconsin; Nash Bros., Tipton, Indiana.

AWARDS.

JUDGE........................R. F. MILLER, Bozeman, Mont.

Ram Two Years Old or Over—First, Alex W. Arnold.

Ram Lamb—First, Alex W. Arnold.

Ewe Two Years Old or Over—First, Alex W. Arnold.

Ewe One Year Old and Under Two—First, Alex W. Arnold.

Ewe Lamb—First, Alex W. Arnold.

Champion Ram, Any Age—First, Alex W. Arnold.

Champion Ewe, Any Age—First, Alex W. Arnold.

Flock—First, Alex W. Arnold.

CHEVIOT.

EXHIBITORS.

G. W. Parnell, Wingate, Indiana; R. & W. Postle, Camp Chase, Ohio.

AWARDS.

JUDGE........................R. F. MILLER, Bozeman, Mont.

Ram Two Years Old or Over—First, Marion, 6742, R. & W. Postle.

Ram One Year Old and Under Two—First, White Stock's Defender, 7064, R. & W. Postle; second, Harrigan, 7140, R. & W. Postle.

Ram Lamb—First and second, R. & W. Postle.

Ewe Two Years Old or Over—First, Polly, 6562, R. & W. Postle; second, R. & W. Postle.

Ewe One Year Old and Under Two—First, My Lady, 7066, R. &. W. Postle; second, R. & W. Postle.

Ewe Lamb—First and second, R. & W. Postle.

Champion Ram Any Age—White Stock's Defender, 7064, R. & W. Postle.

Champion Ewe Any Age—My Lady, 7066, R. & W. Postle.

Get of Sire—First, R. & W. Postle.

Flock—First, R. & W. Postle.

POULTRY DEPARTMENT.

SUPERINTENDENT..........JOHN F. SUMMERS, Malvern, Iowa.

AMERICANS.

EXHIBITORS.

C. S. Adams, Packwood, Iowa; Mrs. Jesse Alexander, Altoona, Iowa; A. L. Anderson, Indianola, Iowa; Mrs. N. B. Ashby, Des Moines, Iowa; J. Ross Bachman, Blakesburg; C. A. Barquist, Des Moines, Iowa; Wm. Beatty, Des Moines, Iowa; Oscar L. Bock, Council Bluffs, Iowa; J. W. Booth, Osceola, Iowa; Mrs. H. I. Branson, West Branch, Iowa; J. M. Brown, St. Charles, Iowa; W. E. Buren & Son, Leland, Iowa; Harry E. Burgess, Osceola, Iowa; W. J. Campbell, Jesup, Iowa; Dr. L. D. Carpenter, Indianola, Iowa; J. W. Clark, Scranton, Iowa; Wib F. Clements, Agency; M. L. Dudley, Des Moines, Iowa; Dunn Bros., Winterset, Iowa; Hanson's Poultry Farm, Dean, Iowa; J. F. Harsh, New Virginia, Iowa; Peter Hove, Stanhope, Iowa; C. W. Howell, Des Moines, Iowa; Joe Johnson, Des Moines, Iowa; Mrs. A. H. Ketchum, Des Moines, Iowa; Wm. J. Lockhart, Des Moines, Iowa; J. R. McDonald, Des Moines, Iowa; Wm. McMichael, Des Moines, Iowa; Beatrice Mansfield, Altoona, Iowa; Ernest Massey, Mystic, Iowa; M. C. Miller, Des Moines, Iowa; Thos. L. Morlan, Indianola, Iowa; O'Donnell Poultry Farm, Valley Junction, Iowa; S. R. Patterson, Centerville, Iowa; C. H. Peverill, Waterloo, Iowa; C. D. Porter, Altoona, Iowa; S. A. Power & Son, Fairfield, Iowa; C. O. Preston, Emerson, Nebraska; Elliott Purmort, Des Moines, Iowa; C. W. Reeder, Leon, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; D. W. Rich, Mt. Pleasant, Iowa; T. L. Ricksecker, Rosedale, Kansas; R. B. Rowe, Indianola, Iowa; J. C. Sandmeier, Waukee, Iowa; Schuster Bros., Des Moines, Iowa; N. I. Seibert, Indianola, Iowa; Julius Sinn, Williamsburg, Iowa; Anthony Stocker, Des Moines, Iowa; C. & C. T. Van Lint, Pella, Iowa; Wm. F. Volz, Cedar Rapids, Iowa; Amos Vogt, Waterloo, Iowa; A. M. Walrath, Des Moines, Iowa; V. G. Warner, Bloomfield, Iowa; J. M. Williamson, Des Moines, Iowa.

AWARDS.

JUDGE..............F. H. SHELLABARGER, West Liberty, Iowa.
JUDGE......................W. S. RUSSELL, Ottumwa, Iowa.

Barred Plymouth Rock Cock—First (1), F. L. Reinhard & Son; second (51), J. L. Todd; third (20), Wm. McMichael.

Barred Plymouth Rock Cockerel—First (95), C. S. Adams; second (252), J. F. Harsh; third (4), Mrs. H. I. Branson.

Barred Plymouth Rock Hen—First (380), J. F. Harsh; second (14), Mrs. H. I. Branson; third (3), F. L. Reinhard & Son.

Barred Plymouth Rock Pullet—First (3), Mrs. H. I. Branson; second (a9209), Amos Vogt; third (2), Mrs. H. I. Branson.

White Plymouth Rock Cock—First (100), C. O. Preston.

White Plymouth Rock Cockerel—First (962), M. L. Dudley; second (a9257), C. H. Peverill; third (961), M. L. Dudley.

White Plymouth Rock Hen—First (7), C. H. Peverill.

White Plymouth Rock Pullet—First (963), M. L. Dudley; second (a9293), C. H. Peverill; third (a9286), C. H. Peverill.

Buff Plymouth Rock Cock—First (1), Wm. J. Lockhart; second (321), Peter Hove; third (67), J. Ross Bachman.

Buff Plymouth Rock Cockerel—First (29), J. Ross Bachman; second (27), C. & C. T. Van Lint; third (45), Peter Hove.

Buff Plymouth Rock Hen—First (5), Peter Hove; second (4), Wm. J. Lockhart; third (69), J. Ross Bachman.

Buff Plymouth Rock Pullet—First (47), C. & C. T. Van Lint; second (30), J. Ross Bachman; third (32), C. & C. T. Van Lint.

Partridge Plymouth Rock Cock—First (133), C. W. Reeder; second (42), Harry E. Burgess.

Partridge Plymouth Rock Cockerel—First (80), Schuster Bros.; second (146), C. W. Reeder; third (56), Schuster Bros.

Partridge Plymouth Rock Hen—First (150), C. W. Reeder; second (91), Mrs. Jesse Alexander; third (93), Mrs. Jesse Alexander.

Partridge Plymouth Rock Pullet—First (245), Schuster Bros.; second (95), Mrs. Jesse Alexander; third (97), Mrs. Jesse Alexander

Silver Wyandotte Cock—First (1199), V. G. Warner; second (1156), V. G. Warner; third (100), Joe Johnson.

Silver Wyandotte Cockerel—First (312), J. R. McDonald; second (1001), V. G. Warner; third (332), J. R. McDonald.

Silver Wyandotte Hen—First (1026), V. G. Warner; second (1027), V. G. Warner; third (364), J. R. McDonald.

Silver Wyandotte Pullet—First (231), V. G. Warner; second (1140), V. G. Warner; third (374), J. R. McDonald.

Golden Wyandotte Cock—First (76), J. W. Booth; second (8), Julius Sinn; third (18), Julius Sinn.

Golden Wyandotte Cockerel—First (3544c), J. W. Booth; second (94), Julius Sinn; third (54), Julius Sinn.

Golden Wyandotte Hen—First (22), J. W. Booth; second (49), Julius Sinn; third (2), J. L. Todd.

Golden Wyandotte Pullet—First (1640a), J. W. Booth; second (88), Julius Sinn; third (93), Julius Sinn.

White Wyandotte Cock—First (26), Oscar L. Bock; second (13e), Ernest Massey; third (1), Anthony Stocker.

White Wyandotte Cockerel—First (1), Mrs. N. B. Ashby; second (10), Dr. L. D. Carpenter; third (8), Dr. L. D. Carpenter.

White Wyandotte Hen—First (20), Dr. L. D. Carpenter; second (18), Dr. L. D. Carpenter; third (86), C. D. Porter.

White Wyandotte Pullet—First (80), Beatrice Mansfield; second (85), Dr. L. D. Carpenter; third (83), Beatrice Mansfield.

Buff Wyandotte Cock—First (205), S. A. Power & Son; second (21), R. B. Rowe; third (1167), V. G. Warner.

Buff Wyandotte Cockerel—First (80), S. A. Power & Son; second (203), V. G. Warner; third (244), S. A. Power & Son.

Buff Wyandotte Hen—First (11), R. B. Rowe; second (1851), S. A. Power & Son; third (269), V. G. Warner.

Buff Wyandotte Pullet—First (80), Thos. L. Morlan; second (32), R. B. Rowe; third (12), R. B. Rowe.

Partridge Wyandotte Cock—First (240), S. A. Power & Son; second (170), V. G. Warner; third (56), Thos. L. Morlan.

Partridge Wyandotte Cockerel—First (169), V. G. Warner; second (50), Thos. L. Morlan.

Partridge Wyandotte Hen—First (19), S. A. Power & Son; second (239), S. A. Power & Son; third (22), Thos. L. Morlan.

Partridge Wyandotte Pullet—First (152), V. G. Warner; second (29), Thos. L. Morlan; third (38), Thos. L. Morlan.

Silver Penciled Wyandotte Cock—First (230), V. G. Warner; second (1181), V. G. Warner.

Silver Penciled Wyandotte Cockerel—First (202), V. G. Warner.

Silver Penciled Wyandotte Hen—First (214), V. G. Warner; second (263), V. G. Warner.

Silver Penciled Wyandotte Pullet—First (209), V. G. Warner; second (213), V. G. Warner; third (218), V. G. Warner.

Columbian Wyandotte Cock—First (268), C. A. Barquist; second, Hansons Poultry Farm.

Columbian Wyandotte Cockerel—First (269), C. A. Barquist; second (270), C. A. Barquist; third (271), C. A. Barquist.

Columbian Wyandotte Hen—First, Hansons Poultry Farm; second, Hansons Poultry Farm; third (11), A. M. Walrath.

Columbian Wyandotte Pullet—First (274), C. A. Barquist; second (273), C. A. Barquist; third (917), W. Beatty.

Black Java Hen—First, Hansons Poultry Farm; second (5), F. L. Reinhard & Son.

Single Comb Rhode Island Red Cock—First (362), T. L. Ricksecker; second (34), W. E. Buren & Son; third (373), T. L. Ricksecker.

Single Comb Rhode Island Red Cockerel—First (392), T. L. Ricksecker; second (395), T. L. Ricksecker; third (35), N. I. Seibert.

Single Comb Rhode Island Red Hen—First (349), T. L. Ricksecker; second (312), T. L. Ricksecker; third (305), T. L. Ricksecker.

Single Comb Rhode Island Red Pullet—First (301), T. L. Ricksecker; second (24), J. C. Sandmier; third (304), T. L. Ricksecker.

Rose Comb Rhode Island Red Cock—First (116), Wm. F. Volz; second (5), D. W. Rich; third (133), Wm. F. Volz.

Rose Comb Rhode Island Red Cockerel—First (275), C. W. Howell; second (47), D. W. Rich; third (43), D. W. Rich.

Rose Comb Rhode Island Red Hen—First (69), Wm. F. Volz; second (40), Wm. F. Volz; third (57), Wib F. Clements.

Rose Comb Rhode Island Red Pullet—First (94), C. W. Howell; second (66), C. W. Howell; third (5196), D. W. Rich.

ASIATICS.

EXHIBITORS.

A. L. Anderson, Indianola, Iowa; Wib F. Clements, Agency, Iowa; Arthur Dearinger, Reasnor, Iowa; Hansons Poultry Farm, Dean, Iowa; Weir Hart, Bondurant, Iowa; Frank Johnson, Monroe, Iowa; R. A. Lundberg, Altoona, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

Light Brahma Cock—First (11), F. L. Reinhard & Son; second (53), R. E. West; third (45), Weir Hart.

Light Brahma Cockerel—First (70), Frank Johnson; second (72), Frank Johnson; third (68), A. L. Anderson.

Light Brahma Hen—First (17), Weir Hart; second (74), Frank Johnson; third (28), Weir Hart.

Light Brahma Pullet—First (26), A. L. Anderson; second (75), Frank Johnson; third (76), Frank Johnson.

Buff Cochin Cock—First (12), F. L. Reinhard & Son; second (77), R. E. West.

Buff Cochin Cockerel—First (13), F. L. Reinhard & Son; second (67), R. E. West; third (14), F. L. Reinhard & Son.

Buff Cochin Hen—First (24), R. E. West; second (69), F. L. Reinhard & Son; third (59), R. E. West.

Buff Cochin Pullet—First (76), R. E. West; second (97), R. E. West.

Partridge Cochin Cock—First (21), R. E. West; second (58), Wib F. Clements.

Partridge Cochin Cockerel—First (65), R. A. Lundberg; second (97), R. A. Lundberg; third (52), R. E. West.

Partridge Cochin Hen—First (83), R. E. West; second (84), Wib F. Clements; third (96), R. E. West.

Partridge Cochin Pullet—First (61), R. E. West.

Black Langshan Cock—First (76), Arthur Dearinger; second (5), R. E. West; third (59), F. L. Reinhard & Son.

Black Langshan Cockerel—First (75), R. E. West; second (10), Arthur Dearinger; third (85), Arthur Dearinger.

Black Langshan Hen—First (60), F. L. Reinhard & Son; second (99), R. E. West.

Black Langshan Pullet—First (92), R. E. West; second (79), Arthur Dearinger.

White Langshan Cock—First (35), R. E. West; second (82), R. E. West.

White Langshan Cockerel—First (69), R. E. West; second (43), Weir Hart; third (45), Weir Hart.

White Langshan Hen—First (7), Weir Hart; second (1), R. E. West; third (19), R. E. West.

White Langshan Pullet—First (82), Weir Hart; second (39), Weir Hart; third (46), Weir Hart.

MEDITERRANEAN.

EXHIBITORS.

W. Beatty, Des Moines, Iowa; W. O. Coon, Des Moines, Iowa; Wib F. Clements, Agency, Iowa; Jas. H. Jones, Des Moines, Iowa; Hanson's Poultry Farm, Dean, Iowa; J. Russell Lang, Brooklyn, Iowa; Ellwyn Lucas, Des Moines, Iowa; Mrs. C. P. Nelson, Fairfield, Iowa; O'Donnell Poultry Farm, Valley Junction, Iowa; W. Patterson, Carlisle, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; Schuster Bros., Des Moines, Iowa; Jas. L. Stark, Russell, Iowa; Anthony Stocker, Des Moines, Iowa; R. E. West, Altoona, Iowa; J. M. Williamson, Des Moines, Iowa.

AWARDS.

Single Comb Brown Leghorn Cock—First (10), W. O. Coon.

Single Comb Brown Leghorn Cockerel—First (14), W. Patterson; second (22), W. Patterson; third (18), W. Patterson.

Single Comb Brown Leghorn Hen—First (16), F. L. Reinhard & Son; second (185), W. O. Coon; third (20), W. Patterson.

Single Comb Brown Leghorn Pullet—First (21), W. Patterson; second (188), W. O. Coon; third (52), Wib F. Clements.

Rose Comb Brown Leghorn Cockerel—First (51), Wib F. Clements; second (45), Wib F. Clements.

Rose Comb Brown Leghorn Pullet—First (46), Wib F. Clements; second (81), Wib F. Clements.

Single Comb White Leghorn Cock—First (23), Anthony Stocker; second (276), J. M. Williamson; third (283), J. M. Williamson.

Single Comb White Leghorn Cockerel—First (279), J. M. Williamson; second (278), J. M. Williamson; third (34), Jas. L. Stark.

Single Comb White Leghorn Hen—First (256), J. M. Williamson; second (14), Jas. H. Jones; third (122), Jas. L. Stark.

Single Comb White Leghorn Pullet—First (282), J. M. Williamson; second (281), J. M. Williamson; third (31), Jas. L. Stark.

Rose Comb White Leghorn Cock—First (132), Mrs. C. P. Nelson.

Rose Comb White Leghorn Cockerel—First (99), Mrs. C. P. Nelson; second (138), Mrs. C. P. Nelson.

Rose Comb White Leghorn Hen—First (143), Mrs. C. P. Nelson.

Rose Comb White Leghorn Pullet—First (93), Mrs. C. P. Nelson; second (31), Mrs. C. P. Nelson.

Single Comb Buff Leghorn Cock—First (60), Ellwyn Lucas; second (61), Ellwyn Lucas; third, Hanson's Poultry Farm.

Single Comb Buff Leghorn Cockerel—First (14), Ellwyn Lucas.

Single Comb Buff Leghorn Hen—First (51), Ellwyn Lucas; second (52), Ellwyn Lucas; third, Hanson's Poultry Farm.

Single Comb Buff Leghorn Pullet—First (54), Ellwyn Lucas; second (55), Ellwyn Lucas; third (53), Ellwyn Lucas.

Single Comb Black Leghorn Cockerel—First, Hanson's Poultry Farm; second, Hanson's Poultry Farm; third, Hanson's Poultry Farm.

Single Comb Black Leghorn Pullet—First, Hanson's Poultry Farm; second, Hanson's Poultry Farm.

Silver Duckwing Leghorn Hen—First, Hanson's Poultry Farm.

Single Comb Black Minorca Hen—First (8), R. E. West; second, Hanson's Poultry Farm; third, Hanson's Poultry Farm.

Single Comb Black Minorca Cock—First (17), F. L. Reinhard & Son.

Single Comb White Minorca Cock—First (10), Schuster Bros.

Single Comb White Minorca Cockerel—First (26), Schuster Bros.; second (45), Schuster Bros.; third (42), Schuster Bros.

Single Comb White Minorca Hen—First (36), Schuster Bros.; second (85), Schuster Bros.; third (87), Schuster Bros.

Single Comb White Minorca Pullet—First (19), Schuster Bros.; second (23), Schuster Bros.; third (20), Schuster Bros.

White Faced Black Spanish Cock—First (18), F. L. Reinhard & Son.

White Faced Black Spanish Hen—First (23), F. L. Reinhard & Son; second (31), R. E. West; third, Hanson's Poultry Farm.

Blue Andalusian Cock—First (32), R. E. West; second (53), Wib F. Clements; third, Hanson's Poultry Farm.

Blue Andalusian Cockerel—First (53), R. E. West; second (56), R. E. West; third (82), Wib F. Clements.

Blue Andalusian Hen—First (68), O'Donnell Poultry Farm; second (52), Wib F. Clements; third (11), Wib F. Clements.

Blue Andalusian Pullet—First (55), Wib F. Clements; second (87), Wib F. Clements; third (19), R. E. West.

Mottled Ancona Cock—First (88), Wib F. Clements; second (72), Wib F. Clements.

Mottled Ancona Cockerel—First, Hanson's Poultry Farm; second (38), R. E. West; third (53), Wib F. Clements.

Mottled Ancona Hen—First, Hanson's Poultry Farm; second (11), Wib F. Clements; third, Hanson's Poultry Farm.

Mottled Ancona Pullet—First (55), R. E. West; second, Hanson's Poultry Farm; third, Hanson's Poultry Farm.

ENGLISH.

EXHIBITORS.

Altamont Poultry Farm, Colfax, Iowa; A. L. Anderson, Indianola, Iowa; Dr. S. L. Beaver, Harlan, Iowa; Harry E. Burgess, Osceola, Iowa; A. L. Chamberlain, Altoona, Iowa; Carl Dare, Osceola, Iowa; J. R. Gilbert, Prairie City, Iowa; Hanson's Poultry Farm, Dean, Iowa; L. W. Harkins, Menlo, Iowa; Kolburn Hegna, Des Moines, Iowa; C. M. Hummer, Keswick, Iowa; Iowana Farms, Davenport, Iowa; O'Donnell Poultry Farm, Valley Junction, Iowa; Luther R. Pike, Missouri Valley, Iowa; K. L. Price, Missouri Valley, Iowa; C. W. Reeder, Leon, Iowa; W. N. Servis, Garden Grove, Iowa; L. C. West, Dallas Center, Iowa.

AWARDS.

Rose Comb Red Cap Cock—First, Hanson's Poultry Farm; second, Hanson's Poultry Farm.

Rose Comb Red Cap Cockerel—First, Hanson's Poultry Farm; second, Hanson's Poultry Farm.

Rose Comb Red Cap Hen—First, Hanson's Poultry Farm; second, Hanson's Poultry Farm.

Rose Comb Red Cap Pullet—First, Hanson's Poultry Farm; second, Hanson's Poultry Farm.

Single Comb Buff Orpington Cock—First (104), Dr. S. L. Beaver; second (1347m), Dr. S. L. Beaver; third (46), Harry E. Burgess.

Single Comb Buff Orpington Cockerel—First (20), Luther R. Pike; second (4), L. W. Harkins; third (2), L. W. Harkins.

Single Comb Buff Orpington Hen—First (34), Harry E. Burgess; second (4), L. C. West; third (5), L. C. West.

Single Comb Buff Orpington Pullet—First (6), L. C. West; second (7), L. C. West; third (5), L. W. Harkins.

Single Comb Black Orpington Cock—First (143), C. W. Reeder; second (174), C. W. Reeder; third (31), Harry E. Burgess.

Single Comb Black Orpington Cockerel—First (7428d), Kolburn Hegna; second (139), C. W. Reeder; third (7407c), Kolburn Hegna.

Single Comb Black Orpington Hen—First (28703), Kolburn Hegna; second (134), C. W. Reeder; third (36), Harry E. Burgess.

Single Comb Black Orpington Pullet—First (3035a), Kolburn Hegna; second (3010a), Kolburn Hegna; third (3043a), Kolburn Hegna.

Single Comb White Orpington Cock—First (275), C. M. Hummer; second (e1500), Altamont Poultry Farm; third (372), Iowana Farms.

Single Comb White Orpington Cockerel—First (127), Carl Dare; second (460), C. W. Reeder; third (128), Carl Dare.

Single Comb White Orpington Hen—First (a421), Iowana Farms; second (138), Carl Dare; third (8329), W. N. Servis.

Single Comb White Orpington Pullet—First (a401), Iowana Farms; second (68), K. L. Price; third (a402), Iowana Farms.

POLISH.

EXHIBITORS.

Hanson's Poultry Farm, Dean, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

White Crested Black Polish Cock—First (29), R. E. West.

White Crested Black Polish Pullet—First (21), R. E. West.

Bearded Silver Polish Hen—First, Hanson's Poultry Farm.

Bearded White Polish Cock—First, Hanson's Poultry Farm.

Non-Bearded Golden Polish Cock—First, Hanson's Poultry Farm; second, Hanson's Poultry Farm.

Non-Bearded Golden Polish Hen—First, Hanson's Poultry Farm; second, Hanson's Poultry Farm.

DUTCH.

EXHIBITORS.

Wib F. Clements, Agency, Iowa; O'Donnell Poultry Farm, Valley Junction, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa.

AWARDS.

Silver Spangled Hamburg Cock—First (99), O'Donnell Poultry Farm; second (19), F. L. Reinhard & Son; third (72), Wib F. Clements.

Silver Spangled Hamburg Cockerel—First (64), Wib F. Clements; second (68), Wib F. Clements.

Silver Spangled Hamburg Hen—First (95), Wib F. Clements; second (53), Wib F. Clements; third (20), F. L. Reinhard & Son.

Silver Spangled Hamburg Pullet—First (22), F. L. Reinhard & Son; second (54), Wib F. Clements; third (21), F. L. Reinhard & Son.

FRENCH.

EXHIBITORS.

Wib F. Clements, Agency, Iowa; Hanson's Poultry Farm, Dean, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

Mottled Houdan Cock—First, Hanson's Poultry Farm; second, Hanson's Poultry Farm; third (82), R. E. West.

Mottled Houdan Cockerel—First and second, Hanson's Poultry Farm; third (72), R. E. West.

Mottled Houdan Hen—First, Hanson's Poultry Farm; second (26), F. L. Reinhard & Son; third, Hanson's Poultry Farm.

Mottled Houdan Pullet—First and third, Hanson's Poultry Farm; second (67), R. E. West.

GAMES AND GAME BANTAMS.

EXHIBITORS.

Harry E. Burgess, Osceola, Iowa; Wm. E. Evens, Des Moines, Iowa; Hanson's Poultry Farm, Dean, Iowa.

AWARDS.

Black Breasted Red Game Cock—First (47), Harry E. Burgess.

Black Breasted Red Game Hen—First (72), Harry E. Burgess.

Red Pyle Game Cock—First, Hanson's Poultry Farm.

Red Pyle Game Cockerel—First and second, Hanson's Poultry Farm.

Red Pyle Game Hen—First, Hanson's Poultry Farm.

Red Pyle Game Pullet—First, and second, Hanson's Poultry Farm.

Black Game Hen—First (35), Harry E. Burgess.

Red Pyle Game Bantam Cock—First (51), Wm. E. Evens; second, Hanson's Poultry Farm.

Red Pyle Game Bantam Cockerel—First (52), Wm. E. Evens.

Red Pyle Game Bantam Hen—First and second, Hanson's Poultry Farm.

Red Pyle Game Bantam Pullet—First (54), Wm. E. Evens; second (55), Wm. E. Evens.

ORIENTAL GAMES AND BANTAMS.

EXHIBITORS.

Hanson's Poultry Farm, Dean, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa.

AWARDS.

Cornish Indian Cock—First (27), F. L. Reinhard & Son.

White Indian Cockerel—First and second, Hanson's Poultry Farm.

White Indian Hen—First and second, Hanson's Poultry Farm.

White Indian Pullet—First and second, Hanson's Poultry Farm.

Black Breasted Red Malay Hen—First and second, Hanson's Poultry Farm.

ORIENTAL GAMES AND BANTAMS.

EXHIBITORS.

A. L. Chamberlain, Altoona, Iowa; Hanson's Poultry Farm, Dean, Iowa; Weir Hart, Bondurant, Iowa; C. O. Preston, Emerson, Neb.; F. L. Reinhard & Son, Ottumwa, Iowa; R. E. West, Altoona, Iowa; V. G. Warner, Bloomfield, Iowa.

AWARDS.

Silver Seabright Cock—First (33054), C. O. Preston.

Silver Seabright Hen—First (33060), C. O. Preston.

Black Rose Comb Hen—First and second, Hanson's Poultry Farm.

White Booted Cock—First (61), F. L. Reinhard & Son.

White Booted Hen—First (63), F. L. Reinhard & Son.

White Booted Pullet—First, (64), F. L. Reinhard & Son.

Light Brahma Cock—First, Hanson's Poultry Farm.

Light Brahma Hen—First and second, Hanson's Poultry Farm.

Buff Cochin Cock—First (75), A. L. Chamberlain; second (23), R. E. West.

Buff Cochin Cockerel—First (56), R. E. West.

Buff Cochin Hen—First (20), R. E. West; second (74), A. L. Chamberlain; third (28), F. L. Reinhard & Son.

Buff Cochin Pullet—First (64), R. E. West.

Partridge Cochin Cock—First (4), R. E. West.

Partridge Cochin Hen—First, Hanson's Poultry Farm.

White Cochin Cock—First (93), R. E. West.

White Cochin Cockerel—First (60), R. E. West; second (80), Weir Hart.

White Cochin Hen—First (22), R. E. West.

White Cochin Pullet—First (87), Weir Hart; second (58), R. E. West.

Black Cochin Cock—First and second, Hanson's Poultry Farm.

Black Cochin Cockerel—First (61), R. E. West; second and third, Hanson's Poultry Farm.

Black Cochin Hen—First (14), R. E. West; second, Hanson's Poultry Farm; third (44), R. E. West.

Black Cochin Pullet—First and second, Hanson's Poultry Farm; third (51), R. E. West.

Black Tailed Japanese Hen—First, Hanson's Poultry Farm.

CAPON.

EXHIBITOR.

Hanson's Poultry Farm, Dean, Iowa.

AWARDS.

Any Variety Capon—First, Hanson's Poultry Farm.

EXHIBITION PENS.

EXHIBITORS.

Mrs. Jesse Alexander, Altoona, Iowa; A. L. Anderson, Indianola, Iowa; Mrs. N. B. Ashby, Des Moines, Iowa; Altamont Poultry Farm, Colfax, Iowa; Mrs. H. I. Branson, West Branch, Iowa; J. Ross Bachman, Blakesburg, Iowa; J. W. Booth, Osceola, Iowa; Oscar L. Bock, Council Bluffs, Iowa; J. M. Brown, St. Charles, Iowa; Dr. S. L. Beaver, Harlan, Iowa; F. H. Boynton, Chariton, Iowa; J. W. Clark, Scranton, Iowa; Wib F. Clements, Agency, Iowa; A. L. Chamberlain, Altoona, Iowa; W. O. Coon, Des Moines, Iowa; Clifford W. Duke, Clarinda, Iowa; M. L. Dudley, Des Moines, Iowa; Dunn Bros., Winterset, Iowa; Carl Dare, Osceola, Iowa; Arthur Dearinger, Reasnor, Iowa; W. H. Golly, Jr., Zearing, Iowa; J. F. Harsh, New Virginia, Iowa; Peter Hove, Stanhope, Iowa; C. W. Howell, Des Moines, Iowa; Weir Hart, Bondurant, Iowa; L. W. Harkins, Menlo, Iowa; C. M. Hummer, Keswick, Iowa; Iowana Farms, Davenport, Iowa; Frank Johnson, Monroe, Iowa; Jos. H. Jones, Des Moines, Iowa; Wm. J. Lockhart, Des Moines, Iowa; Wm. McMichael, Selma, Iowa; J. R. McDonald, Des Moines, Iowa; Beatrice Mansfield, Altoona, Iowa; Thos. L. Morlan, Indianola, Iowa; L. G. Miller, Des Moines, Iowa; Annamarie Nelson, Altoona, Iowa; S. R. Patterson, Centerville, Iowa; C. D. Porter, Altoona, Iowa; S. A. Power & Son, Fairfield, Iowa; Elliott Purmort, Des Moines, Iowa; W. Patterson, Carlisle, Iowa; T. L. Ricksecker, Rosedale, Kans.; F. L. Reinhard & Son, Ottumwa, Iowa; C. W. Reeder, Leon, Iowa; R. B. Rowe, Indianola, Iowa; D. W. Rich, Mt. Pleasant, Iowa; Schuster Bros., Des Moines, Iowa; Julius Sinn, Williamsburg, Iowa; Jas. L. Stark, Russell, Iowa; J. L. Todd, Des Moines, Iowa; C. & C. T. Van Lint, Pella, Iowa; Wm. F. Volz, Cedar Rapids, Iowa; V. G. Warner, Bloomfield, Iowa; A. M. Walrath, Des Moines, Iowa; R. E. West, Altoona, Iowa; L. C. West, Dallas Center, Iowa; Wm. P. Watson, Grinnell, Iowa; J. M. Williamson, Des Moines, Iowa.

AWARDS.

Barred Plymouth Rock Fowls—First, (29-30-31-32-33), F. L. Reinhard & Son.

Barred Plymouth Chicks—First, (257-258-254-255-256), J. F. Harsh; second, (5-6-7-8-9), Mrs. H. I. Branson; third, (6-7-8-9-10), S. R. Patterson.

Buff Plymouth Fowl—First, (7-30-34-26-16), C. & C. T. Van Lint; second, (180-16-23-41-46), Peter Hove; third, (7-8-9-10-11), Wm. J. Lockhart.

Buff Plymouth Chicks—First, (12-13-14-15-16), Wm. J. Lockhart; second, (26-29-39-49-53), Peter Hove; third, (55-56-49-50-52), J. Ross Bachman.

White Plymouth Chicks—First, (956-957-958-959-960), M. L. Dudley;

Partridge Plymouth Rock Fowls—First, (86-81-88-89), Mrs. Jesse Alexander; second, (172-173-171-170-169), C. W. Reeder; third, (88-55-161-74-48), Schuster Bros.

Partridge Plymouth Rock Chicks—First, (58-53-72-23-70), Schuster Bros.; second, (129-127-141-132-128), C. W. Reeder; third, (21-81-75-2-25), Schuster Bros.

Silver Wyandotte Fowls—First, (1008-903-1185-1024-1074), V. G. Warner; second, (366-682-320-398-363), J. R. McDonald; third, (115-84-121-43-15), A. L. Anderson.

Silver Wyandotte Chicks—First, (201-212-1003-1049-292), V. G. Warner; second, (390-392-377-343-376), J. R. McDonald.

Golden Wyandotte Fowls—First, (58-56-3509c-5312c-3521c), J. W. Booth; second, (220-281-263-219-1166), V. G. Warner.

Golden Wyandotte Chicks—First, (4-59-36-84-39), Julius Sinn; second, (3536c-3496c-3545c-3597c-3458c), J. W. Booth; third, (15-16-17-18-19), J. L. Todd.

White Wyandotte Fowls—First, (31-32-882-29-30), Oscar L. Bock; second, (38-57-9-10-11), Mrs. N. B. Ashby.

White Wyandotte Chicks—First, (79-70-72-75-74), Beatrice Mansfield; second, C. D. Porter; third, (37-39-34-36-35), Oscar L. Bock.

Buff Wyandotte Fowls—First, S. A. Power & Son; second, (17-22-21-90-24), R. B. Rowe; third, (221-217-1172-266-268), V. G. Warner.

Buff Wyandotte Chicks—First, (41-40-42-45-44), Thos. L. Morlan; second, (211-215-206-204-210), V. G. Warner.

Columbia Wyandotte Fowls—First, (6-7-8-9-10), A. M. Walrath; second, (1-2-3-4-5), A. M. Walrath.

Partridge Wyandotte Fowls—First, (91-79-160-156-36), Thos. L. Morlan.

Partridge Wyandotte Chicks—First, (224-225-222-216-223), V. G. Warner; second, (33-137-32-35-31), Thos. L. Morlan.

Rose Comb Rhode Island Red Fowls—First, (44-14-38-5), Wm. F. Volz; second, (79-67-92-91-92), Wib F. Clements.

Rose Comb Rhode Island Red Chicks—First, (62-67-263-53-57), C. H. Howell; second, D. W. Rich; third, (76-43-5-42-65), Wib F. Clements.

Single Comb Rhode Island Red Fowls—First, (368-316-331-315-313), T. L. Ricksecker; second, F. L. Reinhard & Son; third, (34-35-36-37-38), F. L. Reinhard & Son.

Single Comb Rhode Island Red Chicks—First, (397-327-328-329-330), T. L. Ricksecker; second, (12-5-23-21-13), Elliott Purmort; third, (1-2-3-4-5), Dunn Bros.

Light Brahma Fowls—First, (80-81-77-78-79), Frank Johnson; second, (10-40-30-29-1), Weir Hart.

Light Brahma Chicks—First, (85-86-82-83-84), Frank Johnson; second, (17-24-23-8-48), Weir Hart.

Buff Cochin Chicks—Second, (64-61-74-63-62), R. E. West.

Partridge Cochin Chicks—First, (1-65-68-2-60), R. E. West.

Buff Orpington Fowls—First (8-9-10-11-12), L. W. Harkins; second (8-9-10-11-20), L. C. West; third (45-19-32-38-15), Wm. P. Watson.

Buff Orpington Chicks—First (17-4-42-5-21), Dr. S. L. Beaver; second (13-14-15-16-17), L. W. Harkins; third (13-14-15-16-17), L. C. West.

Black Orpington Fowls—First (422-464-474-473-458), C. W. Reeder; second (138-196-124-135-149), C. W. Reeder.

Black Orpington Chicks—First (470-451-471-453-469), C. W. Reeder.

White Orpington Fowls—First (a584-a564-398-a418-a448), Iowana Farms; second (139-144-145-146-147), Carl Dare; third (461-459-475-466-462), C. W. Reeder.

White Orpington Chicks—First (142-180-181-182-183), Carl Dare; second (a405-a406-a801-a403-a404), Iowana Farms; third (421-422-423-424-425), C. W. Reeder.

Black Langshan Fowls—First (188-64-46-27-58), Arthur Dearinger; second (73-70-69-8-67), R. E. West.

Black Langshan Chicks—First (71-55-32-8-76), R. E. West; second (59-71-69-66-1), Arthur Dearinger.

Single Comb White Leghorn Fowls—First (2-5-7-8-10), Jos. H. Jones; second (40-45-47-48-49), Jos. H. Jones; third (205-284-285-286-287), J. M. Williamson.

Single Comb White Leghorn Chicks—First (293-294-295-296-297), J. M. Williamson; second (288-289-290-291-292), J. M. Williamson; third (10-8-6-4-2), J. Russell Lang.

Single Comb Brown Leghorn Chicks—First (200-199-198-195-194), W. O. Coon.

Black Minorca Fowls—First (4-88-68-93-7657*), R. E. West; second (5-3-45-33-11), L. G. Miller.

PIGEONS.

EXHIBITORS.

Wib F. Clements, Agency, Iowa; Ellwyn Lucas, Des Moines, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa.

AWARDS.

Pair Homing Pigeons—First (12-15), Ellwyn Lucas; second, Wib F. Clements; third, Wib F. Clemnts.

Pair Swallow Pigeons—First and second, Wib F. Clements.

Pair Tumbler Pigeons—First, F. L. Reinhard & Son.

Pair Turbet Pigeons—First, F. L. Reinhard & Son.

TURKEYS.

EXHIBITORS.

J. H. Allen, Walnut Grove, Minnesota; Harry E. Burgess, Osceola, Iowa; R. H. Longworth, Polk City, Iowa; V. G. Warner, Bloomfield, Iowa; J. C. Watts, Berwick, Iowa.

AWARDS.

Bronze Cock—First (1), J. C. Watts; second (77), J. H. Allen; third (1242), V. G. Warner.

Bronze Cockerel—First (1193), V. G. Warner.

Bronze Hen—First (1246), V. G. Warner; second (78), J. H. Allen; third (2), J. C. Watts.

Bronze Pullet—First (1088), V. G. Warner.

Buff Cock—First (88), Harry E. Burgess.

Buff Cockerel—First (66), Harry E. Burgess.

Buff Hen—First (67), Harry E. Burgess.

Buff Pullet—First (64), Harry E. Burgess.

White Cockerel—First (1), R. H. Longworth.

White Hen—First (15), J. H. Allen; second (14), J. H. Allen.

White Pullet—First (2), R. H. Longworth.

DUCKS.

EXHIBITORS.

Harry E. Burgess, Osceola, Iowa; Mrs. Robt. Carlile, Valley Junction, Iowa; Clifford W. Duke, Clarinda, Iowa; Hanson's Poultry Farm, Dean, Iowa; L. W. Harkins, Menlo, Iowa; T. H. Kaldenberg, Pella, Iowa; Mrs. H. Niswander, Kinross, Iowa; O'Donnell Poultry Farm, Valley Junction, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; V. G. Warner, Bloomfield, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

White Pekin Drake, Old—First (1186), V. G. Warner; second (24), R. E. West; third (77), O'Donnell Poultry Farm.

White Pekin Drake, Young—First (58), R. E. West; second (1023), V. G. Warner; third (15), Mrs. H. Niswander.

White Pekin Duck, Old—First (1009), V. G. Warner; second (54), R. E. West; third (33), Harry E. Burgess.

White Pekin Duck, Young—First (72), R. E. West; second (1021), V. G. Warner; third (14), Mrs. H. Niswander.

Colored Rouen Drake, Old—First (52), R. E. West.

Colored Rouen Drake, Young—First, second, third, Hanson's Poultry Farm.

Colored Rouen Duck, Old—First (6), R. E. West; second, Hanson's Poultry Farm.

Colored Rouen Duck, Young—First, second and third, Hanson's Poultry Farm.

Black Cayuga Drake, Young—First and second, Hanson's Poultry Farm.

Black Cayuga Duck, Young—First and second, Hanson's Poultry Farm.

Gray Call Drake, Old—First and second, Hanson's Poultry Farm; third (71), R. E. West.

Gray Call Drake, Young—First and second, Hanson's Poultry Farm.

Gray Call Duck, Old—First and second, Hanson's Poultry Farm; third, R. E. West.

Gray Call Duck, Young—First and second, Hanson's Poultry Farm.

Colored Muscovy Drake, Old—First and second, Hanson's Poultry Farm; third (20), L. W. Harkins.

Colored Muscovy Drake, Young—First and second, Hanson's Poultry Farm; third (88), R. E. West.

Colored Muscovy Duck, Old—First (24), L. W. Harkins; second (19), R. E. West; third, Hanson's Poultry Farm.

Colored Muscovy Duck, Young—First, Hanson's Poultry Farm; second (92), R. E. West; third (25), L. W. Harkins.

White Muscovy Drake, Old—First and second, Hanson's Poultry Farm; third (57), R. E. West.

White Muscovy Duck, Old—First (8), R. E. West; second and third, Hanson's Poultry Farm.

White Indian Runner Drake, Old—First (618), Mrs. Robt. Carlile; second (52), Clifford W. Duke.

White Indian Runner Drake, Young—First (190), Clifford W. Duke; second (189), Clifford W. Duke.

White Indian Runner Duck, Old—First (631), Mrs. Robt. Carlile; second (629), Mrs. Robt. Carlile; third (193), Clifford W. Duke.

White Indian Runner Duck, Young—First (191), Clifford W. Duke; second (192), Clifford W. Duke.

Indian Runner Drake, Old—First (46), F. L. Reinhard & Son; second (44), F. L. Reinhard & Son; third (527), T. H. Kaldenberg.

Indian Runner Drake, Young—First (48), F. L. Reinhard & Son; second (577), T. H. Kaldenberg; third (16), Mrs. H. Niswander.

Indian Runner Duck, Old—First (46), T. H. Kaldenberg; second (50), F. L. Reinhard & Son; third (49), F. L. Reinhard & Son.

Indian Runner Duck, Young—First (53), F. L. Reinhard & Son; second (52), F. L. Reinhard & Son; third, Hanson's Poultry Farm.

GEESE.

EXHIBITORS.

Weir Hart, Bondurant, Iowa; Hanson's Poultry Farm, Dean, Iowa; F. L. Reinhard & Son, Ottumwa, Iowa; W. W. Seeley, Stuart, Iowa; C. and C. T. Van Lint, Pella, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

Gray Toulouse Gander, Old—First (58), R. E. West; second (8), Weir Hart.

Gray Toulouse Gander, Young—First (10), C. & C. T. Van Lint.

Gray Toulouse Goose, Old—First (15), Weir Hart; second (71), R. E. West.

Gray Toulouse Goose, Young—First (6), C. and C. T. Van Lint.

White Embden Gander, Old—First (2), R. E. West; second (54), F. L. Reinhard & Son.

White Embden Gander, Young—First (55), F. L. Reinhard & Son; second (19), R. E. West.

White Embden Goose, Old—First (57), F. L. Reinhard; second (56), F. L. Reinhard; third (53), R. E. West.

White Embden Goose, Young—First (58), F. L. Reinhard & Son; second (51), R. E. West.

Gray African Gander, Old—First (54), R. E. West.

Gray African Gander, Young—First (56), R. E. West; second, Hanson's Poultry Farm.

Gray African Goose, Old—First (57), R. E. West.

Gray African Goose, Young—First, Hanson's Poultry Farm.

Brown Chinese Gander, Old—First (63), R. E. West.

Brown Chinese Goose, Old—First (66), R. E. West.

White Chinese Gander, Old—First (70), R. E. West; second, Hanson's Poultry Farm; third (1), W. W. Seeley.

White Chinese Gander, Young—First, Hanson's Poultry Farm; second (67), F. L. Reinhard & Son.

White Chinese Goose, Old—First, Hanson's Poultry Farm; second (5), W. W. Seeley; third (4), W. W. Seeley.

White Chinese Goose, Young—First, Hanson's Poultry Farm; second (68), F. L. Reinhard & Son.

EGG LAYING CONTEST.

AWARDS.

First, Altamont Poultry Farm, Colfax, Iowa; second and third, L. C. West, Dallas Center, Iowa, and Altamont Poultry Farm, Colfax, Iowa; fourth, Oscar L. Bock, Council Bluffs, Iowa.

COMMERCIAL EGGS, AMERICAN.

AWARDS.

First, Wib F. Clements, Agency, Iowa; second, Clifford W. Duke, Clarinda, Iowa; third, Anthony Stocker, Des Moines.

MEDITERRANEAN.

First, Anthony Stocker, Des Moines, Iowa; second, J. M. Williamson, Des Moines, Iowa; third, C. E. Graff, Guernsey, Iowa.

ASIATIC.

First, F. L. Reinhard & Son, Ottumwa, Iowa; second, Clifford W. Duke, Clarinda, Iowa.

ENGLISH.

First, E. M. Walrath, Des Moines, Iowa; second, Altamont Poultry Farm, Colfax, Iowa; third, C. W. Reeder, Leon, Iowa.

SWEEPSTAKES.

Anthony Stocker, Des Moines, Iowa.

SPECIAL OFFERED BY THE INTERSTATE PUBLISHING COMPANY, DES MOINES.

Best Cockerel, All Breeds Competing—Carl Dare, Osceola, Iowa.

SPECIAL OFFERED BY E. E. RICHARDS, WESTERN POULTRY JOURNAL, CEDAR RAPIDS, IOWA.

Iowana Farms, Davenport, Iowa.

SPECIALS OFFERED BY OTIS & MOE OF CHICAGO, ILL.

C. W. Reeder, Leon, Iowa.
Dr. L. D. Carpenter,
J. M. Williamson, Des Moines, Iowa.

REPORT OF BOYS' JUDGING CONTEST IOWA STATE FAIR AND EXPOSITION, 1912

Name	Chester White Swine		Berkshire Swine		Percheron Horses		Shire Horses		Shorthorn Cattle		Hereford Cattle		Reed Yellow Dent		Boone County White		Grand total	Rank
	Place	Reason	Place	Reason	Place	Reason	Place	Reason	Place	Reason	Place	Reason	Place	Reason	Place	Reason		
Glen F. Richards, LeGrand, Iowa	60	36	60	34	50	31	58	37	60	36	58	37	42	33	56	32	720	1
Ross Dowell, Bedford, Iowa	45	32	60	36	37	29	60	37	60	37	60	38	50	19	36	27	633	2
Hans E. Skott, Maquoketa, Iowa	60	39	60	37	20	20	58	34	55	35	45	32	53	32	48	33	661	3
Forest H. Ford, Tipton, Iowa	40	34	60	35	45	30	58	34	60	32	45	31	42	32	42	34	654	4
Lloyd Riley, Norway, Iowa	60	32	58	36	30	26	58	33	55	33	45	28	54	30	50	24	652	5
Robt. Leffler, Stockport, Iowa	50	34	60	33	45	35	58	34	55	34	45	32	40	23	40	28	646	6
Clair A. Taylor, Ames, Iowa	60	36	58	34	45	30	45	23	58	34	45	33	40	29	42	33	645	7
Erwin Larson, Forest City, Iowa	50	35	55	36	30	30	45	30	50	36	55	36	45	21	54	34	642	8
Frank Hoover, Oskaloosa, Iowa	40	29	55	32	45	32	35	26	60	36	58	39	53	25	48	28	641	9
Lloyd E. Hudson, Knoxville, Iowa	50	35	55	33	37	20	58	36	58	33	45	31	45	28	42	30	636	10
Russell Teachout, Imogene, Iowa	47	27	60	32	37	25	60	32	60	33	60	32	45	20	42	19	631	11
Henry Menenough, Grimes, Iowa	37	30	60	32	45	30	40	30	50	33	58	34	48	21	49	30	627	12 and 13
Llewellyn Smith, Keystone, Iowa	40	37	65	31	30	28	58	34	60	34	58	30	38	23	34	27	627	12 and 13
Delmar D. Latham, LeGrand, Iowa	50	34	60	37	20	18	40	29	60	34	60	38	41	28	47	30	626	14
Geo. M. Hilton, Malvern, Iowa	35	25	55	37	52	30	55	34	60	32	55	36	32	22	39	26	625	15 and 16
Loren E. McClure, St. Charles, Iowa	50	34	60	36	45	30	50	34	45	30	35	23	52	26	35	20	625	15 and 16
Paul Brown, Indianola, Iowa	50	35	52	32	30	23	58	34	58	30	60	36	47	19	43	17	624	17
Clem B. Siverly, Diagonal, Iowa	60	28	52	30	45	28	32	22	58	29	60	22	47	22	56	32	623	18
Armien Bruns, Sigourney, Iowa	57	28	60	34	48	25	58	30	50	30	55	20	44	26	33	24	622	19
Donald F. Wilcox, Melvin, Iowa	48	30	37	25	53	30	58	36	50	30	55	34	47	23	36	29	621	20
J. Leo Ahart, Dow City, Iowa	25	20	60	32	45	30	40	32	60	35	58	36	50	20	51	23	617	21
Wallace H. Longworth, Polk City, Iowa	50	30	60	35	30	25	55	31	55	32	45	33	35	20	42	22	616	22
Paul W. Herrick, Grimes, Iowa	60	32	37	23	43	30	58	33	58	34	60	34	38	20	34	19	613	23
Robt. H. Griffitts, Mitchellville, Iowa	60	38	25	20	40	30	60	31	50	31	55	36	46	27	36	26	611	24
Thos. C. Dannen, Melbourne, Iowa	50	32	30	20	60	33	40	28	60	36	60	35	49	25	33	19	610	25 and 26
Harlan Link, Waukon, Iowa	60	34	52	30	53	33	60	35	40	28	45	23	48	20	26	23	610	25 and 26
Homer Pattison, LeMars, Iowa	60	33	35	26	52	32	58	34	55	32	45	25	30	28	39	25	609	27
Kenneth Andrew, Indianola, Iowa	60	32	52	30	43	25	55	30	60	34	30	25	40	27	46	19	608	28
Edgar Turner, Shenandoah, Iowa	40	32	58	34	37	25	30	27	55	35	45	33	46	25	53	31	604	29 and 30
Harral C. Longworth, Polk City	48	31	30	25	45	29	30	27	58	33	45	32	59	38	41	33	604	29 and 30
Henry F. Mammen, McClelland, Iowa	57	36	55	35	60	34	30	23	40	30	35	20	51	29	38	30	603	31 and 32
Wm. L. Logan, Hillsboro, Iowa	50	30	55	20	40	29	60	33	55	36	60	29	45	20	32	19	603	31 and 32
Raymond Sayre, Indianola, Iowa	47	35	52	34	22	20	40	29	60	33	60	36	44	24	48	18	602	33
Chester Viers, Swan, Iowa	40	34	58	35	22	20	58	35	55	29	45	35	45	29	40	21	601	34

Harry Welsch, Elliott, Iowa	32	30	55	37	60	32	55	26	58	33	30	23	41	23	39	25	599	35
J. Parvin Eves, Springdale, Iowa	60	34	55	34	22	20	40	30	50	31	58	34	50	22	31	27	598	36
Adolph Evans, Decorah, Iowa	47	29	60	31	45	30	33	24	58	33	30	29	52	34	42	20	597	37
Ray Johnson, Coin, Iowa	30	28	47	30	50	34	45	30	55	33	45	30	40	18	58	22	595	38
Davis J. Johnson, Clarinda, Iowa	30	20	50	31	45	32	40	29	60	35	45	30	43	22	47	35	594	39 and 40
A. W. Warden, Melbourne, Iowa	22	20	60	30	45	30	58	33	58	33	55	37	37	19	37	20	594	39 and 40
Earl Heaton, Elberon, Iowa	30	25	47	29	52	32	60	34	50	32	58	30	34	20	36	21	590	41
Bernard Hoagland, Essex, Iowa	35	30	60	37	25	22	40	25	60	32	55	33	40	30	33	26	588	42
Vern Whitmore, Coin, Iowa	30	28	55	37	22	20	45	34	60	35	30	32	45	35	45	34	587	43
Arthur Marshall, Battle Creek	45	37	60	37	32	30	30	20	58	34	60	34	42	22	20	25	585	44, 45 and 46
Otis L. Dickey, Redfield, Iowa	60	30	50	30	37	22	60	32	50	31	45	31	38	19	32	18	585	44, 45 and 46
Glenn W. Kurtz, Marshalltown	50	34	55	35	25	20	32	28	60	30	45	33	45	26	35	22	585	44, 45 and 46
Raymond Teachout, Imogene, Iowa	47	30	30	20	30	20	40	28	58	35	60	29	56	31	48	22	584	47 and 48
Ed. Knotek, Washington, Iowa	60	25	60	30	22	20	58	35	55	32	55	28	39	15	35	15	584	47 and 48
Glen Phillips, New Sharon, Iowa	40	30	60	34	35	22	35	25	60	32	30	25	53	33	49	20	583	49
Beryl Strong, Clarinda, Iowa	57	37	55	34	30	26	35	29	58	33	35	30	44	21	30	28	582	50 and 51
John Day, Afton, Iowa	45	33	55	33	35	22	58	34	58	32	35	22	39	22	38	21	582	50 and 51
Theo Abkes, Austinville, Iowa	50	28	47	22	52	30	30	24	50	31	45	30	36	18	46	20	579	52
Walter D. Jensen, Newell, Iowa	35	30	50	30	20	18	45	26	58	33	55	35	52	25	47	19	578	53, 54 and 55
Wilbur Pollock, College Springs	40	30	58	34	45	20	35	24	50	32	35	30	43	35	47	22	578	53, 54 and 55
Ray Calhoun, Shambaugh, Iowa	40	30	60	34	22	20	40	30	58	36	58	36	41	18	35	20	578	53, 54 and 55
Boyd E. Metier, Weldon, Iowa	30	28	50	35	25	22	58	35	60	38	45	32	38	20	41	19	576	56
Wybro Griffiths, Marion, Iowa	30	33	52	33	50	34	30	28	58	34	35	28	42	21	40	23	571	57 and 58
Lowell Johnson, Crystal, Iowa	50	29	55	25	40	30	31	28	60	32	60	20	42	23	30	16	571	57 and 58
Frank Hoxie, Jr., Imogene, Iowa	35	30	35	30	45	30	60	34	50	32	30	24	49	20	45	20	569	59
Chester Richards, Gruver, Iowa	22	18	55	35	37	22	58	29	60	29	30	20	57	24	51	21	568	60 and 61
Wallace McKee, Indianola, Iowa	37	29	35	20	45	28	45	31	60	34	30	29	47	23	52	23	568	60 and 61
Geo. Gibson, Guthrie Center, Iowa	40	35	35	30	35	29	25	20	58	34	60	35	45	23	34	29	567	62, 63 and 64
Frank Brown, Shannon City, Iowa	47	30	60	32	30	20	45	21	60	33	45	28	36	20	41	19	567	62, 63 and 64
Clyde Naylor, Stratford, Iowa	30	30	60	34	25	22	30	25	40	28	55	21	50	34	54	29	567	62, 63 and 64
Guy Peterson, Cherokee, Iowa	27	20	60	32	30	20	33	24	58	34	58	30	45	23	45	27	566	65 and 66
Santford Bryson, Mason City, Iowa	50	34	30	22	25	20	58	32	45	30	30	26	55	32	47	30	566	65 and 66
Herbert Anderson, Shenandoah	40	28	37	22	30	22	60	33	58	33	30	33	52	33	36	18	565	67 and 68
Hugh Williams, Danville, Iowa	50	30	25	20	43	29	55	33	58	32	35	29	40	22	39	25	565	67 and 68
G. C. Johnson, LeGrand, Iowa	50	31	35	29	22	20	30	23	60	37	60	33	46	25	37	26	564	69, 70 and 71
Lester Johnson, Coin, Iowa	40	31	37	20	37	20	60	31	60	31	45	29	48	21	35	19	564	69, 70 and 71
Francis E. Mohler, Bedford, Iowa	40	25	30	20	30	24	60	36	58	32	55	30	50	22	32	20	564	69, 70 and 71
Lewis Smith, Dunlap, Iowa	50	30	55	32	30	20	35	28	58	34	45	23	46	16	40	20	562	72
Dea J. Brasted, Guthrie Center	20	18	55	35	22	20	45	23	58	33	60	31	55	28	37	19	559	73
Chris Christensen, Humboldt, Iowa	50	36	25	20	40	28	25	22	60	35	55	32	46	19	43	20	556	74
John Casey, Knoxville, Iowa	40	28	35	25	30	20	58	33	40	22	45	33	45	18	50	30	552	75
Herluf Hansen, Elk Horn, Iowa	32	25	37	25	45	23	40	22	55	34	45	30	45	28	47	18	551	76
Murdo McRea, Des Moines, Iowa	27	25	60	34	30	20	25	21	50	31	45	30	46	28	49	23	544	77
Robt. Spargur, Council Bluffs, Iowa	45	26	60	32	22	20	31	23	58	32	45	25	48	22	30	21	542	78
Kinsey Nealy, Somerset, Iowa	50	20	30	25	40	28	25	20	60	28	58	28	45	17	42	19	537	79
Mort Brooks, Thompson, Iowa	40	22	30	20	30	30	58	32	58	30	35	28	42	18	38	24	535	80
Dean Finch, Ida Grove, Iowa	57	33	30	20	37	27	30	24	50	30	58	23	39	18	38	18	532	81
Ralph E. Winsler, Moravia, Iowa	40	30	25	20	45	30	50	31	58	33	55	34	42	29	30	23	530	82

REPORT OF BOYS' JUDGING CONTEST IOWA STATE FAIR AND EXPOSITION, 1912—CONCLUDED

Name	Chester White Swine		Berkshire Swine		Percheron Horses		Shire Horses		Shorthorn Cattle		Hereford Cattle		Reed Yellow Dent		Boone County White		Grand total	Rank
	Place	Reason	Place	Reason	Place	Reason	Place	Reason	Place	Reason	Place	Reason	Place	Reason	Place	Reason		
Max Garrett, Braddyville, Iowa	57	35	25	20	22	20	25	21	58	34	45	30	41	25	47	21	526	83 and 84
John Hendrick, Osceola, Iowa	30	25	37	30	20	20	58	34	45	32	45	33	48	16	35	18	526	83 and 84
Isaac C. Henderson, Paullina, Iowa	30	25	37	20	45	29	58	23	60	28	30	22	43	19	39	16	524	85
Henry J. Longstraat, Eddyville, Iowa	48	29	30	25	25	20	40	29	55	33	30	28	45	18	37	31	523	86
Earl Benton, Rockwell City, Iowa	40	25	55	25	30	25	25	20	58	30	45	29	44	19	34	17	521	87 and 88
Asker T. Bergo, Northwood, Iowa	20	20	25	20	30	20	58	34	58	32	45	33	45	18	41	22	521	87 and 88
Ellis D. Willis, Steamboat Rock, Iowa	20	18	60	34	22	20	30	24	50	33	45	32	45	26	43	28	520	89
Wayne Kauffman, Whitten, Iowa	45	20	30	20	45	20	58	22	58	30	45	20	35	21	35	20	514	90
Geo. Wall, Burdette, Iowa	30	30	47	28	37	23	30	23	55	32	30	27	34	22	40	20	508	91
Wilbur C. Finn, Shenandoah, Iowa	20	18	37	25	43	28	30	26	55	33	45	23	45	25	30	20	503	92
Wm. H. Stacy, Osage, Iowa	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	43	30	48	30	151	93

PART XIV

REPORT OF AGRICULTURAL CONDITIONS

BY

COUNTY AND DISTRICT AGRICULTURAL SOCIETIES IN IOWA

1912

ADAIR.

W. W. BURRELL, GREENFIELD, OCTOBER 3, 1912.

General Condition of Crops and Season—The season has been favorable, except during corn planting. On account of inferior seed some had to plant the second time. Good weather during the haying and harvesting period made it possible to harvest all small grain in good condition.

Corn—Well above the average; will yield 40 to 75 bushels; quality good. The early frost hurt some late plantings but 90 per cent of the crop is out of the way of frost.

Oats—Best crop we have had in years; yield from 20 to 50 bushels; excellent quality and all harvested and threshed in good shape.

Wheat—Good, not much raised but what there was yielded from 20 to 50 bushels; quality good.

Rye—Very little raised.

Barley—Not much raised.

Flax—None.

Buckwheat—None.

Millet—Very little grown.

Sorghum—Good.

Timothy—Good; taken care of in excellent condition.

Clover—Same as timothy.

Prairie Hay—Not any.

Other Grains and Grasses—Blue grass pastures have been excellent and have furnished good pasture all the season.

Potatoes—Small crop early potatoes; late crop fair.

Vegetables—Plenty of all kinds and good.

Apples—Almost a failure.

Other Fruits—Good, far above the average, especially plums.

Cattle—Not as many as usual but fairly well stocked; mostly cows; young stuff short. Feeding steers also short.

Horses—Well supplied and good quality; plenty of young stock.

Swine—Plenty of old hogs; young stock not up to standard.

Sheep—Very few raised in this county.

Poultry—Splendid, both as to quality and number..

Bees—Very few raised.

Drainage—Farmers are using more tile every year.

Lands—Constantly advancing in price; worth from $60.00 to $200.00 per acre, and quite a little changing hands.

Report of Fair—Held September 10-13 inclusive. The attendance was not up to average, nor were the exhibits in some departments. Bad weather on the last day caused a cancellation of that day.

ADAMS.

GEO. E. BLISS, CORNING, SEPTEMBER 18, 1912.

General Condition of Crops and Season—Have had timely rains, which have made all crops good.

Corn—Best crop we have had since 1880.

Oats—Quality splendid; yield from 40 to 55 bushels per acre.

Wheat—The yield of winter wheat broke all previous records, making an average of 26 bushels per acre. A big acreage being put in now.

Rye—But little grown; yield about 28 bushels per acre.

Barley—But little sown; good quality and yield.

Flax—Not any.

Buckwheat—None raised.

Millet—Little sown; large yield and nearly all threshed for seed.

Sorghum—Large acreage; nearly all cut for forage.

Timothy—Fair yield; splendid quality.

Clover—Very scare. Too dry in 1910 and 1911. Very little withstood early drouth.

Prairie Hay—Good quality; splendid yield.

Other Grains and Grasses—Some alfalfa; good yield; cut three times.

Potatoes—Both early and late ones yielded bountifully.

Vegetables—All kinds did remarkably well.

Apples—Not any.

Other Fruits—An abundance of plums; excellent quality.

Cattle—Very few in feed lots; milch cows in great demand.

Horses—Great demand for horses; selling at an average of $200.00. Not quite as many colts as usual.

Swine—Short crop of pigs and disease carried off a large number of the older ones.

Sheep—More sheep than usual and in good condition.

Poultry—More poultry and eggs sold than ever before.

Bees—Did fairly well this year; many died last winter.

Drainage—Very little put in this year.

Lands—Selling from $75.00 to $150.00 per acre. Several farms sold this year.

Report of Fair—Held September 9-12, inclusive.

ALLAMAKEE.

GEO. S. HALL, WAUKON, SEPTEMBER 20, 1912.

General Condition of Crops and Season—Good.

Corn—Needs 10 days to ripen. Promises to be a bountiful crop.

Oats—Extra good.

Wheat—Very good.

Rye—Not much raised but what there was was very good.

Barley—Fair crop.

Flax—Fair crop.

Buckwheat—Good crop.

Millet—Fair.

Sorghum—Good.

Timothy—Extra good.

Clover—Good.

Prairie Hay—Fair.

Other Grains and Grasses—Pastures good all summer; blue grass especially good.

Potatoes—Big crop.

Vegetables—All vegetables are good.

Apples—Very scarce.

Other Fruits—Light crop.

Cattle—In good condition and healthy.

Horses—Generally in good condition.

Swine—In prime condition; no cholera in this county for several years.

Sheep—In excellent condition.

Poultry—Generally healthy; a thriving industry.

Bees—Good season for bees.

Drainage—Natural drainage.

Other Industries—Iron mines are in a flourishing condition.

Lands—In fine condition.

Report of Fair—Held September 27-30 inclusive. The fair was a success both financially and otherwise; large crowds in attendance each day. More money taken in than any previous year.

AUDUBON.

S. C. CURTIS, AUDUBON, OCTOBER 14, 1912.

General Condition of Crops and Season—Better than usual.

Corn—One of the largest crops ever had in the county.

Oats—Fair crop.

Wheat—Exceeded the expectations of the farmers; yielding as high as 50 bushels per acre.

Rye—None raised to speak of.

Barley—Just a fair crop.

Flax—None raised.

Buckwheat—Little grown.

Millet—What little there was was good.

Timothy—Very good crop.

Clover—Not so good as in previous years.

Prairie Hay—Not any in this county.

Potatoes—The crop would have been above the average had it not been for the late rains.

Vegetables—Good crop.

Apples—Very scarce.

Other Fruits—Bountiful crop of plums.

Cattle—Improving.

Horses—Farmers are breeding the best and a great many are shipped out each year.

Swine—Raised extensively in this county. Duroc Jersey and Poland Chinas predominating.

Sheep—A gaining industry.

Poultry—The main stay of the farmer.

Bees—Not many.

Drainage—Natural.

Other Industries—Canning factory doing a good business.

Lands—Rolling, but the best of soil; raising the very best corn on top of the highest hills. The soil is of black loam with clay sub-soil.

Report of Fair—Held September 17-20 inclusive. Rained two out of four days. However, we paid out and will have a little left over for improvements.

APPANOOSE.

H. A. RUSSELL, CENTERVILLE, SEPTEMBER 6, 1912.

General Condition of Crops and Season—Plenty of moisture in early spring but dry during June, July and August.

Corn—Late in planting but will make a good yield if not hurt by frost.

Oats—Very good; some yielding as high as 70 bushels per acre.

Wheat—Good; not much sown; yield about 20 to 30 bushels per acre.

Rye—Fine.

Barley—Not any.

Flax—Not any.

Buckwheat—Very little sown but that was good.

Millet—Not very good; too dry.

Sorghum—Very good.

Timothy—Fine; good seed and free from weeds.

Clover—Frozen out.

Prairie Hay—Good yield; fine hay.

Potatoes—Too dry; not a very good yield.

Vegetables—All good quality and plentiful.

Apples—Not very good; scarce.

Other Fruits—Plums, pears and berries very good.

Cattle—Scarce; prices high; pastures short.

Horses—High prices for good horses.

Swine—Not many in the county. Doing fine.

Sheep—More and better sheep being raised.
Poultry—Quite an interest taken in poultry raising.
Bees—Not many; a great number died during the winter.
Report of Fair—No fair held. Too dry.

BENTON.

SOL WHITE, VINTON, OCTOBER 7, 1912.

General Condition of Crops and Season—Good.
Corn—Very good.
Oats—Excellent.
Wheat—But little grown.
Rye—Good.
Barley—Good to extra fine.
Flax—None grown.
Buckwheat—But little raised.
Millet—Not much grown.
Sorghum—Good; small acreage.
Timothy—One-half crop.
Clover—Small crop.
Prairie Hay—Fair.
Potatoes—Small crop.
Vegetables—Good.
Apples—None.
Other Fruits—Good.
Cattle—Scarce and high.
Horses—Good.
Swine—Diseased; about one-half the usual number.
Sheep—Good.
Poultry—Very good.
Drainage—Good.
Other Industries—Thriving.
Lands—Selling from $165 to $225 per acre.
Report of Fair—Held September 4-6 inclusive. A very good fair.

BLACK HAWK.

C. A. ROWND, CEDAR FALLS, IOWA, NOVEMBER, 1912.

General Condition of Crops and Season—Very good.

Corn—Slightly above the average. A frost that came before the corn was sufficiently matured and a high wind which blew the corn down badly caused considerable soft corn.

Oats—At least 10 bushels above the average.

Wheat—Froze out badly in some places. Where the stand was good results were very satisfactory.

Rye—A little above the average. About 19 bushels per acre.

Barley—Fully up to the average; from 40 to 45 bushels per acre.

Flax—Practically none raised. Farm leases are often written, prohibiting the raising of flax.

Buckwheat—I know of none.

Millet—An average crop.

Sorghum—Large yield and good quality. Considerable loss on account of an early frost.

Timothy—About an average crop. Some fields very good; others very unsatisfactory.

Clover—The drouth came at a time when the clover needed moisture. Crop below average. Clover and timothy mixed gave a good yield.

Prairie Hay—Very small acreage. Above the average.

Other Grains and Grasses—Alfalfa is still in the experimental stage. Some report success and others failure but farmers are still confident of success.

Potatoes—Large yield; much above the average. Injured by grub worm and scab.

Vegetables—Very favorable season and all vegetables were a large yield and good quality.

Apples—Only a few. A few orchards bore a full crop of apples of good quality.

Other Fruits—All small fruit was of good quality and a large yield.

Cattle—In good condition. This being a dairy county the number has been cut down on account of a large portion of the calves being slaughtered.

Horses—Increasing in quality and quantity very materially. Farmers have learned that it pays to produce the best.

Swine—Very nice lot of pigs. We had an epidemic of hog cholera which covered a large part of the county.

Sheep—On account of the low price of wool and mutton the number is decreasing instead of increasing.

Poultry—On account of high prices for poultry products this industry is increasing.

Bees—This industry has been very satisfactory.

Drainage—About the usual amount being done.

Other Industries—Factories in this county are increasing with great rapidity.

Lands—Increasing in price at a rapid rate. Good farms with ordinary improvements and in good locations are in demand at $150.00 to $200.00 per acre and are being bought by speculators.

Fair—None held.

BOONE.

W. C. TRELOAR, OGDEN, OCTOBER 25, 1912.

General Condition of Crops and Season—Good.

Corn—Good.

Oats—Fine.

Wheat—Good.

Rye—Very little grown.

Barley—Fair.

Flax—Not any.

Buckwheat—None planted.

Millet—Fair.

Sorghum—Fair.

Timothy—Good.

Clover—Good.

Prairie Hay—None.

Potatoes—Good.

Vegetables—Good.

Apples—Poor.

Other Fruits—Fair.

Cattle—Good.

Horses—Good.

Swine—Good.

Sheep—Not many raised.

Poultry—Good.

Bees—Good.

Drainage—More being put in each year.

Other Industries—The coal mines are opening up in good shape; more men being employed every day.

Lands—Advancing very fast.

Report of Fair—Held September 17-20th inclusive. We had rainy weather but nevertheless we had a successful fair; large exhibits in all departments and good racing.

BOONE.

JOHN S. CROOKS, BOONE, OCTOBER 15, 1912.

General Condition of Crops and Season—Good.

Corn—Large yield.

Oats—Large yield; average about 60 bushels.

Wheat—Extra fine; average from 40 to 60 bushels.

Millet—Fine; good yield.

Timothy—Good yield; 1½ to 2 tons per acre.

Clover—Good yield.

Prairie Hay—Good yield.

Other Grains and Grasses—All good.

Potatoes—Fair crop.

Vegetables—Extra good; large yield.

Apples—None to speak of.

Other Fruits—Fair yield.

Cattle—Not many in the county.

Swine—Large number.

Sheep—Few being fed.

Poultry—Large supply.

Drainage—A great deal of drainage being done; mostly county drains.

Lands—Value from $125.00 to $200.00 per acre.

Report of Fair—October 1-4 inclusive. Fair attendance; fine weather and fair exhibits.

BUCHANAN.

A. G. RIGBY, INDEPENDENCE, OCTOBER 28, 1912.

General Condition of Crops and Season—Early season dry; much rain from middle of August to date. Crops are all of good quality and abundant in yield. Better than last year.

Corn—Splendid crop; frost did some damage to the soft corn but quality is generally good. Will yield from 40 to 70 bushels per acre.

Oats—Fine quality and good yield; damaged some in shock and stack by rain. Will run from 25 to 50 bushels per acre.

Wheat—Good crop; not extensively raised in this county but the acreage is considerably larger than last year and results justify a still larger increase.

Rye—Good quality and fair yield. Not a great deal grown.

Barley—Not much raised here. Good quality and yield.

Flax—None raised.

Buckwheat—Small acreage; fair crop.

Millet—Splendid crop; small acreage.

Sorghum—Very little raised.

Timothy—Excellent quality; better yield than last year.

Clover—Did well this year. The late rains made it favorable for fall growth and seeding.

Prairie Hay—Very little in the county. Good where grown.

Other Grains and Grasses—Alfalfa has been successfully grown in small patches in an experimental way and it has done well.

Potatoes—Lack of early moisture interfered somewhat with normal growth of early potatoes. The late ones are a good crop but inclined to be scabby.

Vegetables—Abundant; quality good.

Apples—Not extensively raised but a good crop where the orchards had proper attention.

Other Fruits—Abundant; excellent quality. Best plum season ever known here.

Cattle—Raised quite extensively, both for beef and dairying purposes.

Horses—More draft and road horses than for a number of years; no epidemic.

Swine—Cholera prevalent. We have all the standard breeds.

Sheep—An increasing industry.

Poultry—Extensively raised. We have many fancy breeders.

Bees—Not many in the county; some disease reported.

Drainage—Considerable tiling has been done this season.

Other Industries—In a thrifty and prosperous condition.

Lands—Increasing in value, selling from $75.00 to $200.00 per acre, depending on the location, quality of soil and improvements.

Fair—Held Sept. 10-14 inclusive. Largest fair in the history of the Association.

BREMER.

J. Q. LAUER, WAVERLY, IOWA, OCTOBER 24, 1912.

General Condition of Crops and Season—Ideal in my estimation.

Corn—A good crop; yield above the average.

Oats—Fine; good yield and quality.

Wheat—Larger acreage and better yield than usual.

Rye—Good yield; fine quality.

Barley—Not much raised.

Flax—Little, if any, grown.

Millet—Good crop; small acreage.

Sorghum—Good but not as much raised as usual.

Timothy—Fair; better yield, however, than for the past few years.

Clover—Good.

Prairie Hay—Good; not much in the county.

Other Grains and Grasses—Small acreage but a good yield of alfalfa.

Potatoes—Early crop not so good as the late one.

Vegetables—Average crop.

Apples—Not up to average.

Other Fruits—Abundant supply of plums; other small fruits a general average.

Cattle—As indicated by our display at the fair we have "the best ever."

Horses—Improving.

Swine—Not very good on account of disease.

Sheep—Fine; not many in the county, however.

Poultry—Generally a fine showing throughout the county.

Bees—Few in the county.

Drainage—We have good natural drainage but there is some tiling being done.

Other Industries—Sugar factory doing a very fine business. Sweet corn factories; tile factory; skirt factory, etc., doing a good business.

Lands—The best in the state; a black top soil with clay or gravel subsoil.

BUENA VISTA.

W. J. SIEVERS, ALTA, SEPTEMBER 27, 1912.

General Condition of Crops and Season—Excellent. Plenty of rain and warm weather made the yield far above average.

Corn—A little backward on account of fall rains but reports would indicate the yield will be from 50 to 85 bushels per acre.

Oats—The same as corn.

Wheat—Very little raised but the quality and yield good.

Rye—Very small acreage.

Barley—Very good yield.

Flax—None that I know of.

Buckwheat—I know of none.

Millet—An excellent yield.

Sorghum—Good quality; small acreage.

Timothy—A very good stand.

Clover—An excellent stand; in fact the best in years.

Prairie Hay—A very good stand.

Other Grains and Grasses—All did well this year, owing to abundance of rain and moisture.

Potatoes—Plentiful as usual. This community is noted for the large amount of potatoes raised and it has proven to be a profitable crop.

Vegetables—Exceptionally good.

Apples—No apples raised this year.

Other Fruits—Cherries and plums were abundant; very large crop.

Cattle—Have done well this season on account of the abundance of grass. There will be a large number put in the feed yards this year.

Horses—Top prices paid for horses of the heavy draft classes. No demand for light horses.

Swine—A very favorable year.

Sheep—Quite a number of farmers are buying lambs to rough it for 60 to 90 days.

Poultry—A profitable industry; more being raised each year.

Bees—Not very flourishing.

Drainage—There is more drainage done year after year. Land owners are realizing the full value of draining their land.

Other Industries—Strictly a farming community.

Lands—Selling very high and going higher; average price being about $150.00.

Report of Fair—Held August 13-16 inclusive. Tuesday and Wednesday were ideal days and large crowds attended. The exhibits were up to the usual standard and interest was taken in all. The races filled fine, we having the largest list of entries in 27 years. On Friday it rained and the fair was postponed to Saturday but rain on Friday night made it necessary to call everything off for Saturday. Had it not been for the bad weather we would have cleared a nice little sum of money.

BUTLER.

W. C. SHEPARD, ALLISON, OCTOBER 11, 1912.

General Condition of Crops and Season—Most crops are above the average; the season a trifle cold.

Corn—A large crop; a little late on account of cold weather but mostly matured before frost.

Oats—A very large yield; good quality and over-run in weight.

Wheat—Very little raised; good quality and yield, especially winter wheat.

Rye—Not much grown but a good yield and saved in good condition.

Barley—Same as above; not much raised.

Flax—I know of none in the county.

Buckwheat—But very little raised; not very good quality.

Millet—Not much raised; good crop.

Sorghum—Very little raised; average yield.

Timothy—A very good crop; above the average.

Clover—Crop above the average; some seed being threshed from the second cutting.

Prairie Hay—Usual crop; not much acreage.

Potatoes—Early potatoes a large crop; late ones about average.

Vegetables—A good average yield.

Apples—Very small crop; considerably less than usual.

Other Fruits—Small fruits, such as raspberries and blackberries suffered from drouth; a large yield of plums, currants and strawberries; cherries fair.

Cattle—About the average number; in good condition.

Horses—Usual number; fine quality and in good condition.

Swine—Some cholera; not the average number.

Sheep—Very few in the county.

Poultry—About the usual number; in good condition.

Bees—Very few; a good year for honey.

Drainage—One drainage district in the county. A great deal of private drainage being put in.

Lands—Selling from $80.00 to $175.00 per acre.

Report of Fair—Held September 10-12 inclusive. Good weather; large attendance; exhibits less than usual. Too much money put into attractions.

CALHOUN.

J. C. HOAG, MANSON, SEPTEMBER 16, 1912.

General Condition of Crops and Season—Good.

Corn—Will average 50 bushels.

Oats—Yielded from 40 to 80 bushels per acre.

Wheat—About 20 bushels to the acre.

Barley—About 30 bushels per acre.

Millet—Four tons to the acre.

Timothy—Hay will average one ton to the acre. A good many acres cut for seed.

Clover—Will make 1½ or 2 tons per acre; not much cut for seed.

Prairie Hay—Scarce.

Potatoes—One hundred bushels per acre.

Vegetables—Cabbage and tomatoes are good.

Apples—None.

Other Fruits—Plums are fine.

Cattle—Are in fine condition; not as many as usual.

Horses—In good condition.

Swine—About the same as usual.

Sheep—Not extensively raised.

Poultry—Great many chickens, ducks and geese, but not many turkeys.

Drainage—About completed.

Lands—Valued at about $125.00 per acre.

Report of Fair—Held August 19-22, 1912.

CALHOUN.

W. Q. STEWART, ROCKWELL CITY, OCTOBER 7, 1912.

General Condition of Crops and Season—Good.

Corn—Very good; will average from 35 to 75 bushels per acre. Some replanting will be hurt with the frost.

Oats—Yield from 40 to 70 bushels per acre; quality good.

Wheat—Not much raised but quality and yield good.

Rye—Good.

Barley—Very little raised; yield and quality good.

Flax—Fair quality; not much grown.

Buckwheat—Do not know of any in the county.

Millet—Heavy yield.

Sorghum—Very good quality; not much raised in the county.

Timothy—Very heavy crop.

Clover—First and second crops very good.

Prairie Hay—Good; not much raised.

Other Grains and Grasses—Spring and late pasture very good. Stock will go into winter in fine shape.

Potatoes—Heavy yield.

Vegetables—All kinds a heavy yield.

Apples—Very light crop; no winter apples and very few early varieties.

Other Fruits—Small fruit very good; plums very heavy crop.

Cattle—Good stock of calves and in excellent condition.

Horses—Above the average; generally in good condition.

Swine—Stock of pigs light and quite a little disease.

Sheep—Not many raised here but of good quality and in good condition.

Poultry—A large number; no disease.

Bees—Large amount of honey.

Drainage—Most of the land in this county is tiled.

Other Industries—The Rockwell City Canning Company report the most prosperous season they have ever had. Their output will be 1,800,000 cans.

Lands—Not much selling. Price ranging from $100 to $175.

Report of Fair—Held at Rockwell City, August 6-9. Attendance good and the exhibits were also good in all departments.

CASS.

D. P. HOGAN, MASSENA, OCTOBER 12, 1912.

General Condition of Crops and Season—Extra good.

Corn—None husked as yet but it looks as though it would be one of the biggest crops we ever grew. Some hurt by frost, probably 25 per cent.

Oats—Best in years; big crop and good quality.

Wheat—Best crop we have ever had and by far the largest acreage.

Rye—None.

Barley—Good crop but very little grown.

Buckwheat—None.

Millet—Very little.

Sorghum—Good, but not much of it.

Timothy—Fair crop; cured well.

Clover—Fair crop.

Prairie Hay—Not much but what there was was good.

Potatoes—Light crop; fair quality.

Vegetables—Good.

Apples—Almost a total failure.

Other Fruits—Plums extra big crop; good crop of strawberries; very little other fruit.

Cattle—Many cattle shipped out during summer; supply short. All in good condition.

Horses—About the same as last year.

Swine—Not as good as usual.

Sheep—In good condition; supply not up to average.

Poultry—About as usual.

Bees—Same as last year.

Drainage—Not so much tiling as usual on account of the dry season.

Other Industries—Increasing somewhat.

Lands—Higher in price but not much changing hands.

Report of Fair—Held September 2-5, 1912. Rained opening day and threatened second and third days so that the attendance was not as good as usual. Live stock exhibits extra good. We had a boys' judging contest which was good. We came out $200.00 short.

CASS.

CARL E. HOFFMAN, ATLANTIC, OCTOBER 15, 1912.

General Condition of Crops and Season—Season favorable and crops extra good.

Corn—Yield and quality good.

Oats—Yield from 40 to 75 bushels per acre and the quality good.

Wheat—Good quality.

Rye—Not much raised; quality good.

Barley—Very good yield.

Flax—None raised.

Buckwheat—None.

Millet—Not much grown.

Sorghum—Not much raised.

Timothy—Average yield.

Clover—Average yield.

Prairie Hay—Very little prairie.

Potatoes—Not an average crop.

Vegetables—Good.

Apples—Very few apples on account of frost.

Other Fruits—Very little.

Cattle—Not many being fed.

Horses—Short; generally in good condition.

Swine—Eighty-five per cent of the average number.

Sheep—Not many raised.

Poultry—Plentiful.

Bees—Very few bees.

Drainage—Good natural drainage; plenty of tiling where necessary.

Other Industries—Improving. The Atlantic Canning Company said to be the largest packers of corn in the world.

Lands—Advancing in value. Very little selling until October 1, 1912. Prices range from $130.00 to $175.00.

Report of Fair—Held September 9-13. Good attendance on the first days but rain reduced the income considerably. While we made no money for the treasury we did improve the grounds with new buildings.

CARROLL.

CHAS. H. PARSONS, CARROLL, SEPTEMBER 16, 1912.

Corn—Stand above the average and mostly good; some damage by wind. Will average close to 45 bushels.

Oats—Good quality. Threshing nearly all done; yield about 40 bushels.

Wheat—Winter wheat fine; quality never better; yield from 20 to 40 bushels; spring wheat will average about 18 bushels.

Rye—Very little raised. Will average about 30 bushels.

Barley—Good weight. Rather dark color on account of rain. Yield will be from 20 to 45 bushels.

Flax—None raised here.

Swine—About all of the old hogs shipped out. Not so many pigs as last year; cholera prevalent in some localities.

Poultry—Good season for poultry; fully up to the usual standard.

Drainage—Five hundred thousand dollars will be spent in Carroll County for drainage and tile ditch this and next year.

Lands—Values from $90 to $200 per acre; average about $140.00.

Report of Fair—A great success.

CEDAR.

C. F. SIMMERMAKER, TIPTON, OCTOBER 1, 1912.

General Condition of Crops and Season—The season was good throughout; crops generally good.

Corn—A large acreage and a good crop. If the frost holds off a short time Cedar County will have one of its best crops.

Oats—Good crop; going from 40 to 70 bushels per acre.

Wheat—Very little raised.

Rye—Not much grown but good.

Barley—Good crop and fine quality.

Flax—None raised.

Buckwheat—I know of none.

Millet—Very little grown.

Sorghum—None raised.

Timothy—A good crop and fine quality.

Clover—Fair crop.

Prairie Hay—Not any.

Other Grains and Grasses—None to speak of.

Potatoes—Good crop and good quality.

Vegetables—Very good; plenty of all kinds.

Apples—Very scarce; less than half a crop.

Other Fruits—Plentiful; plums went to waste.

Cattle—Good. A good many in the county but not as many being fed as last year.

Horses—Scarce; quality good.

Swine—Good crop; not much cholera.

Sheep—An average number on the farms.

Poultry—Good; increasing year after year.

Bees—Not many; honey scarce.

Drainage—County most all drained out.

Other Industries—Increasing.

Lands—Very high; ranging from $125.00 to $250.00 per acre; not many sales this year, however.

Report of Fair—Held September 3-6. A successful fair. Our net profits above expenses was $1,100.00.

CERRO GORDO.

ARTHUR PICKFORD, MASON CITY, OCTOBER 15, 1912.

General Condition of Crops and Season—All crops have been better than for several seasons past. Weather has been favorable.

Corn—Good stand. Crop was about two weeks late in ripening but conditions are average.

Oats—Better than for many years; yielding from 50 to 80 bushels per acre and the quality excellent.

Wheat—Not in many years has there been so good a crop of wheat of such excellent berry. Spring wheat has again become one of the staple crops and some are successful in growing winter wheat.

Rye—Not a good crop, owing mostly to the fact that it is largely raised to furnish fall and early spring pasturage, and because of too close grazing the grain yield was small and poor.

Barley—Not much barley grown here. Quality and yield fair.

Flax—What little was grown was of excellent quality and fair yield.

Buckwheat—Not enough grown to report on.

Millet—Only a limited amount grown as a catch crop.

Sorghum—None grown.

Timothy—A great deal more than the usual amount of timothy was cut for seed. It was of fine quality and the yield better than common.

Clover—No clover hay on account of a total failure for two years. Spring sown seed shows up very fine and if it is not winter killed we shall have a big 1913 crop.

Prairie Hay—Very little left; mostly un-reclaimed sloughs and lowland. A good yield.

Potatoes—A splendid crop was grown this year; price low and quality good.

Vegetables—A good year for all garden truck.

Apples—Not enough for home consumption.

Other Fruits—Small fruits were plentiful and good.

Cattle—Cattle are rather scarce and prices high. They are in good condition, owing to the excellent feed during the summer.

Horses—The usual number of foals.

Sheep—Slightly on the increase. They are in better form than usual at this season of the year.

Poultry—A good year to raise young poultry owing to the lack of heavy rains. Prices for eggs and fowls have been higher than common.

Bees—Many hives winter killed and the lack of bloom has made this a poor year for honey.

Drainage—More attention is being paid to drainage than ever before. Wet years or dry years seem to make no difference in the amount of tile laid.

Other Industries—Brick and tile and cement companies doing a good business.

Lands—Selling from $75.00 to $150.00 per acre, according to location and improvements. Sales have been made as high as $200.00. Most of the buyers are purchasing for homes and not for speculation.

Report of Fair—Held September 9-13. Rained on Tuesday and Friday. However, from the point of exhibits and attendance the fair was the best we have ever had.

CHICKASAW.

C. L. PUTNEY, NASHUA, SEPTEMBER 20, 1912.

General Condition of Crops and Season—General average crops; better than for a number of years.

Corn—Some pieces a little late but weather conditions favorable. Most of it will make from 50 to 90 bushels per acre.

Oats—Good quality; yielding from 40 to 75 bushels per acre.

Wheat—More raised than usual; yielding from 20 to 35 bushels.

Rye—Small acreage; good quality; fair yield.

Barley—Same as rye.

Flax—None.

Buckwheat—Very little.

Millet—Good crop.

Sorghum—Very little raised.

Timothy—Crop better than for a number of years.

Clover—Good.

Prairie Hay—Very little acreage left.

Potatoes—Early ones a fair crop; late ones good.

Vegetables—Plenty and of good quality.

Apples—Poor year.

Other Fruits—Grapes and plums good; also small fruits.

Cattle—Quality improved. Feed plentiful and stock in good condition.

Horses—About the usual number raised and of better stock.

Swine—Hog cholera last fall and winter reduced the stock of hogs and there will not be as many marketed as usual.

Sheep—Not many but more farmers are buying them.

Poultry—Gradually on the increase.

Bees—Very few.

Drainage—Considerable work has been done in the past three years.

Lands—Increasing in value; ranging from $100.00 to $180.00 per acre.

Report of Fair—Held at Nashua September 2-6th. Weather conditions favorable; attractions satisfactory and exhibits good. Altogether the best fair we have ever had.

CHICKASAW.

F. D. GRIFFIN, NEW HAMPTON, OCTOBER 18, 1912.

General Condition of Crops and Season—Good.

Corn—Fair yield; about 40 bushels per acre. Two-thirds of the crop fully matured.

Oats—Extra good; average yield 50 bushels.

Wheat—Not much grown; average yield; about 20 bushels per acre.

Rye—Fair.

Barley—Good; average yield 40 bushels per acre.

Flax—Fair; average 15 bushels per acre.

Buckwheat—Fair crop.

Millet—Good.

Sorghum—Good.

Timothy—Fair.

Clover—Not much grown.

Prairie Hay—Light crop.

Other Grains and Grasses—Fair.

Potatoes—Good.

Vegetables—Good.

Apples—Light crop.

Other Fruits—Good.

Cattle—Shorthorns, Holsteins, Polled Angus and Galloways.

Horses—Clydesdales, Percherons, Belgians and Coach.

Swine—Poland Chinas, Chester White and Duroc.

Sheep—Medium and long wool.

Poultry—All kinds.

Drainage—Good.

Other Industries—None to speak of.

Lands—In good condition; increasing in value.

Report of Fair—Attendance extra good; weather, attractions and exhibits all good. Held at New Hampton on September 10-14.

CLAYTON.

HENRY LUEHSEN, GARNAVILLO, SEPTEMBER 23, 1912.

General Condition of Crops and Season—About the average.

Corn—The grub worm has done considerable damage; the crop is a good average.

Oats—A very good yield. Some of the farmers report on 80 per cent crop; good quality.

Wheat—Not much raised.

Rye—A good crop.

Barley—Not quite as good as in former years but will average about 85 per cent.

Flax—None raised.

Buckwheat—None raised.

Millet—None raised.

Sorghum—A fair yield.

Timothy—A good crop; will average about 80 per cent.

Clover—Will average about 75 per cent.

Prairie Hay—A fair yield.

Other Grains and Grasses—A good average crop.

Potatoes—The grub worm ruined considerable of the early crop but late ones will be good; yielding about 80 per cent.

Vegetables—A good crop.

Apples—A very small yield in this part of the state.

Other Fruits—A good average yield; grapes in particular.

Cattle—Our farmers are still improving their large herds. Beef cattle are in great demand.

Horses—Still bringing a good price on the market and Clayton county farmers have some very choice animals.

Swine—Still the principal industry of the county. Our farmers are raising them in large numbers.

Sheep—Some large flocks of high grade animals.

Poultry—One of our best industries. High prices for both eggs and fowls makes it a very profitable business.

Bees—Quite a number of hives did not stand the winter; some report a loss of as many as 50 to 75 good swarms.

Drainage—Natural.

Other Industries—Creamery doing a good business.

Lands—Still going up in price and little for sale. Prices range from $50.00 to $150.00 per acre.

Report of Fair—Held September 10-13, 1912. The attendance was not as large as in some former years but the exhibits were up to the average, the stock exhibits being exceptionally good. The weather was not very favorable the last day.

CLAYTON.

H. A. AXTELL, STRAWBERRY POINT, OCTOBER 22, 1912.

General Condition of Crops and Season—Fair.

Corn—70 per cent. About 40 bushels per acre.

Oats—85 per cent. About 40 bushels per acre.

Wheat—Good.

Rye—Good.

Barley—Fair; about 30 bushels per acre.

Flax—None.

Buckwheat—Good; 25 bushels per acre.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Potatoes—Good.

Vegetables—Good.

Apples—None.

Other Fruits—Good.

Cattle—In good condition.

Horses—Good.

Swine—80 per cent of the usual number.

Sheep—Not many in this township.

Poultry—Good.

Drainage—Not very much in.

Lands—Good.

Report of Fair—Larger attendance than ever before. Held September 3-6 inclusive.

CLAYTON.

D. E. LIVINGOOD, ELKADER, OCTOBER 28, 1912.

General Condition of Crops and Season—Plenty of moisture with good crops in general.

Corn—Large crop.

Oats—Good.

Wheat—Good.

Rye—Good.

Barley—Good.

Flax—None.

Buckwheat—Not much raised.

Millet—Hardly any.

Sorghum—Very little grown.

Timothy—Fair crop; quality good.

Clover—Good.

Potatoes—Bumper crop.

Vegetables—Large variety and all good.

Apples—Scarce.

Other Fruits—Berries plentiful.

Cattle—Breeds are good and improving.

Horses—Good breeds and improving.

Swine—Good breeds and improving.

Sheep—Not many raised but they are of good breeding.

Poultry—Many varieties and improving.

Bees—Not much interest in this industry.

Lands—Improving under good management. Increasing in value very rapidly, selling from $65.00 to $125.00 per acre; some higher.

Report of Fair—Fair held September 25-27. Bad weather most of the time.

CRAWFORD.

O. M. CRESWELL, ARION, OCTOBER 15, 1912.

General Condition of Crops and Season—Good.

Corn—Generally good.

Oats—Fine.

Wheat—Fall excellent; spring good.

Rye—None raised.

Barley—Good.

Flax—None.

Buckwheat—None.

Millet—Good.

Sorghum—Very little raised but good.

Timothy—Light crop.

Clover—Good.

Prairie Hay—None.

Potatoes—Excellent.

Vegetables—Good.

Apples—None.

Other Fruits—Small fruits good.

Cattle—Scarce.

Horses—Enough to supply demand.

Swine—Short crop.

Sheep—Very few; some feeding.

Poultry—Good supply.

Bees—Very few.

Drainage—Very little.

Report of Fair—Held September 10-13. Very rainy weather for fair. Only had one good day.

CLINTON.

G. H. CHRISTENSEN, DEWITT, OCTOBER 8, 1912.

General Condition of Crops and Season—Above the average.

Corn—Very good; 40 to 75 bushels per acre.

Oats—Yield from 40 to 80 bushels per acre.

Wheat—Yield 20 bushels per acre.

Rye—75 per cent of a crop.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—Small crop.

Sorghum—Small acreage.

Timothy—Fair crop.

Clover—None.

Prairie Hay—None.

Potatoes—One-half crop.

Apples—Not over 20 per cent of a crop.

Other Fruits—None.

Cattle—Good.

Horses—Good.

Swine—Not as many as usual.

Sheep—None.

Poultry—Good.

Bees—None.

Lands—Very high.

Report of Fair—Held September 11-13. The best fair in the history of the association.

DAVIS.

H. C. LEACH, BLOOMFIELD, OCTOBER 19, 1912.

Corn—Large acreage; good yield; good quality.

Oats—Large acreage; good quality. Best crop in years.

Wheat—Small acreage; small yield.

Rye—Not much raised this year.

Barley—None.

Flax—None.

Buckwheat—None raised this year.

Millet—Good acreage; crop fine; quality good.

Sorghum—Small crop; good quality.

Timothy—Good crop; fine quality.

Clover—Small crop this year.

Prairie Hay—Not much here any more.

Other Grains and Grasses—Good; quality first class.

Potatoes—Small crop; good quality.

Vegetables—Good crop; quality first class.

Apples—Practically a failure; small crop; poor quality.

Other Fruits—No peaches, pears, or grapes.

Cattle—Scarce; farmers shipped out too many calves.

Horses—About as usual; plentiful and prices fair.

Swine—Quality about as usual; healthy and bringing a good price.

Sheep—All doing well; lambs and old sheep selling at fair prices.

Poultry—Not quite as many raised as usual on account of grain being so high last spring.

Bees—Not many here.

Drainage—A great deal of talk about draining Fox river bottom. Nothing done up to this date.

Lands—Not selling very lively but prices remain from $50.00 to $150.00 per acre.

Report of Fair—Held September 10-13, 1912. Had the largest fair in the history of Davis County.

DECATUR.

R. E. M'LAUGHLIN, LEON, NOVEMBER 12, 1912.

Corn—Corn will average about 110 per cent; quality 95 per cent.

Oats—120 per cent, the greatest crop the county ever had; quality 100 per cent.

Wheat—110 per cent; quality 95 per cent.

Rye—None.

Barley—Not any.

Flax—Not any.

Buckwheat—I know of none.

Millet—110 per cent; average yield; quality 100 per cent.

Sorghum—Raised only for home consumption.

Timothy—Average 110 per cent; quality 100 per cent.

Clover—Yield 95 per cent; quality 100 per cent.

Prairie Hay—Yield 100 per cent. Very little left in the county.

Other Grains and Grasses—Blue grass an average crop.

Potatoes—Average yield about 25 per cent.

Apples—Yield 25 per cent; quality 50 per cent.

Other Fruits—Plums the largest crop ever raised; quality fine. Cherries also very good.

Cattle—Comparatively few cattle in this county.

Horses—The usual number. Quality improving.

Swine—50 per cent. A good deal of cholera.

Sheep—Quality is improving.

Poultry—On the increase.

Bees—Many bees winter killed, not enough honey for home consumption.

Drainage—Natural drainage.

Lands—Have not increased the last year. But very few cash sales of land.

DELAWARE.

J. B. HIGMAN, MANCHESTER, SEPTEMBER 17, 1912.

Corn—Nearly all early planted corn out of the way of frost but quite a large acreage requires two to three weeks to mature.

Oats—Best we have had for several years.

Wheat—Good quality but very little raised.

Rye—All that was sowed early last fall is good. That sown late not so good.

Barley—About 30 bushels per acre.

Buckwheat—Heavy growth.

Timothy—From one-half to one ton per acre.

Clover—About two tons per acre.

Prairie Hay—Good.

Potatoes—Good prospect for late potatoes.

Apples—Poor crop.

Cattle—Healthy and in good condition; good milch cows bring $50.00.

Horses—Prices hold about the same.

Swine—Not more than two-thirds of average number. Some hog cholera.

Sheep—Declining.

Poultry—More than the average number this year; good prices prevailing.

Lands—Increasing in value from ten to twenty dollars per year.

Report of Fair—On account of Buffalo Bill's Wild West Show being held in Manchester during our fair dates our fair was a financial failure.

DICKINSON.

W. W. WHITE, SPIRIT LAKE, SEPTEMBER 16, 1912.

General Condition of Crops and Season—Crop conditions above the average. Crop season favorable although dry weather is needed to mature late corn.

Corn—Average acreage; good stand; heavy yield; excellent quality.

Oats—Average acreage; heavy yield. Conservatively estimated at 55 bushels per acre; good quality.

Wheat—Small acreage of winter wheat; yield reported extra good. Spring wheat yield about 20 bushels per acre; quality good.

Rye—Very little; no report.

Barley—Light acreage; good yield and quality.

Flax—Acreage below average; yield and quality good.

Buckwheat—No report.

Millet—Heavy yield; small acreage.

Sorghum—Heavy yield; small acreage.

Timothy—Heavy hay crop; above average amount of seed harvested.

Clover—Heavy hay crop; no seed crop reported.

Prairie Hay—Heavy yield.

Other Grains and Grasses—Small acreage of alfalfa. Yield reported above average.

Potatoes—Early and late potato acreage about average. Yield above the average.

Vegetables—Good quality; heavy yield.

Apples—Light crop.

Other Fruits—Strawberries, raspberries, blackberries, etc., yield heavy; quality excellent.

Cattle—Not so many as usual. In good condition.

Horses—Average number; in good condition.

Swine—Pig crop about average. In good condition and healthy.

Sheep—Not so many as usual.

Poultry—Supply as good, or above, the average.

Bees—Light supply. Condition and production good.

Drainage—Not so much work done as in 1911.

Lands—Demand strong; prices above last year.

Report of Fair—Held September 10-12. Weather favorable; attendance good.

DICKINSON.

F. H. KELSEY, MILFORD, OCTOBER 23, 1912.

General Condition of Crops and Season—Good.

Corn—Good.

Oats—Good.

Wheat—Good.

Rye—Good.

Barley—Good.

Flax—Good.

Buckwheat—Good.

Millet—Fair.

Timothy—Good.

Clover—Fair.

Prairie Hay—Good.

Other Grains and Grasses—Not any to amount to anything.

Potatoes—Good.

Vegetables—Good.

Apples—None.

Other Fruits—Fair.

Cattle—Good.

Horses—Good.

Swine—Good.

Sheep—Good.

Poultry—Good.

Bees—Good.

Drainage—Good.

Other Industries—Good.

Lands—High.

Report of Fair—Held September 4-6 inclusive at Milford.

FAYETTE.

C. H. KNOS, OELWEIN, OCTOBER 29, 1912.

General Condition of Crops and Season—Very good.

Corn—Corn is a fair crop; quality not so good.

Oats—Very good crop; quality good.

Rye—Not much raised in the county.

Barley—Fairly good.

Timothy—For hay, not very good.

Potatoes—More than enough to supply the needs of the county.

Vegetables—Good.

Apples—Not many.

Cattle—This is a dairy county. Do not believe there are enough cattle in the county to supply the demand. The price for cows has advanced from $10 to $15 per head.

Swine—Not so many as usual; cholera prevalent.

Drainage—Considerable being done.

Lands—We believe more farms have been sold at an advance of from $10 to $20 per acre than ever before in one year.

FAYETTE.

E. A. MC ILREE, WEST UNION, OCTOBER 10, 1912.

General Condition of Crops and Season—The most favorable season for crops we have had for many years. The year of 1912 will be referred to for many years as one of the best for general farming purposes.

Corn—There was an unusual growth of stalks and a very satisfactory earing of the corn crop. The first killing frost damaged the corn and fodder about ten per cent.

Oats—One of the best crops of that grain matured for the past ten years. No rust to speak of and the quality of grain was extra good.

Wheat—Gradually coming back in a small way for milling purposes. The wheat crop has been very satisfactory for the past four or five years and many farmers are sowing a little for their own use.

Rye—Not raised very extensively in this county. It has been winter killed a great deal of late years.

Barley—Was a very good crop but the yield was shaded off a little by the dry weather while it was filling.

Flax—Is not grown in sufficient quantity to be worthy of report.

Buckwheat—Not grown in sufficient quantity to be worthy of report.

Millet—Not grown very largely for stock feed. A little is grown for poultry, but not much.

Sorghum—The cultivation of sorghum has increased quite noticeably in the last few years and the crop this year was fine.

Timothy—For seed is not grown so much as in former years and the crop was a little light this year on account of the dry weather.

Clover—In this county has been very greatly cut down in the past three years by failure to get a stand and by winter killing. Not many good fields.

Prairie Hay—A thing of the past in this county.

Other Grains and Grasses—Not grown in the county to any considerable extent.

Potatoes—The best crop for many years.

Vegetables—In the early part of the season did not do very well, but in the latter part of the season were exceptionally good.

Apples—Were a very small crop. In fact the smallest crop matured for several years; a good many orchards having none.

Other Fruits—Plums were the greatest crop ever known here. Grapes, blackberries, raspberries very poor. Strawberries and currants fine crop.

Cattle—Have had an exceptionally favorable year; an abundance of feed, with no disease of any kind.

Horses—On the increase. Farmers appear to be stocking up on horses of a better quality than formerly.

Swine—More plentiful than for three or four years and so far as known are free from disease.

Sheep—Have done exceptionally well and flocks have been considerably increased.

Poultry—Did very well in the forepart of the season and a very large number were marketed. There has been a great deal of disease since the rainy season.

Bees—Nearly eliminated by the disease of the past three years.

Drainage—Considered from the standpoint of the laying of tile has very greatly increased this summer; many miles of drainage having been put in.

Other Industries—Have flourished as never before by reason of the good times, and the unusual demand for all kinds of material and labor. Very large amount of building has been done and is still in progress.

Lands—Have increased from ten to fifteen per cent since the first of January and are still on the rise.

Report of Fair—The fair this year was held at West Union on September 2-6. The Association adopted a new plan this year and held the fair an extra day and also had two night fairs, which were very greatly to the advantage of the society. The extra day enabled them to get around one very rainy day with a small attendance and enabled the society to pay for a large new horse barn and left a surplus in the treasury of over $500.00. The Fayette County Fair this year closed giving universal satisfaction and leaving a handsome surplus for future use.

FRANKLIN.

C. D. WILLIAMS, HAMPTON, OCTOBER 17, 1912.

General Condition of Crops and Season—Good; early frost hurt corn.

Corn—92 per cent.

Oats—100 per cent.

Wheat—100 per cent. Acreage has been small but is increasing.

Rye—95 per cent.

Barley—105 per cent.

Buckwheat—95 per cent. Not much raised.

Millet—Same as buckwheat.

Sorghum—95 per cent. But little grown.

Timothy—115 per cent.

Clover—100 per cent.

Potatoes—110 per cent.

Vegetables—100 per cent.

Apples—15 per cent.

Other Fruits—95 per cent.

Cattle—Supply 75 per cent. Condition 100 per cent.

Horses—Supply 100 per cent. Condition 100 per cent.

Swine—Supply 85 per cent. Condition 95 per cent.

Sheep—Supply 75 per cent. Condition 100 per cent.

Poultry—Supply and condition 100 per cent.

Bees—Supply 80 per cent. Condition 85 per cent.

Drainage—Large amount being done.

Other Industries—Some factories coming in. All busy.

Lands—20 per cent of an increase in price for 1912.

Report of Fair—Held September 24-27.

GREENE.

S. C. CULBERTSON, JEFFERSON, OCTOBER 25, 1912.

General Condition of Crops and Season—Crops generally very good. Have had an ideal season.

Corn—Yield estimated at from 40 to 75 bushels per acre. Large acreage.

Oats—Yield about 40 to 50 bushels per acre and of good quality.

Wheat—But small acreage; yield from 25 to 30 bushels.

Rye—But little raised.

Barley—Little raised.

Flax—None to speak of.

Buckwheat—Very little sown.

Millet—Very good crop.

Sorghum—But little grown.

Timothy—Fair crop of hay. Lack of early rains cut the crop short.

Clover—Large crop but no seed in it.

Prairie Hay—Acreage small; crop good.

Potatoes—Very light crop. Dealers buying elsewhere for local demand.

Vegetables—Unsually good crop and quality.

Apples—Almost a complete failure.

Other Fruits—Cherries, strawberries and grapes good.

Cattle—A shortage of all kinds. Not as many on feed as usual at this time. Quality is getting better.

Horses—Quality of draft horses excellent. There seems to be a shortage at this time and prices are high.

Swine—To start with we had a light stock of pigs and at present the hogs are dying in all parts of the county. Shortage here next spring will be heavy.

Sheep—Not many raised.

Poultry—Much interest is being taken in the raising of fine and better poultry. In healthy condition.

Bees—Not any.

Drainage—Greene County is doing a vast amount of drainage. Several county drains put in this season and more contemplated. Also lots of private drainage being done.

Other Industries—Merchants have generally had an unusually good business this season and banks have plenty of cash for local demand and deposits are growing.

Lands—Quite a lot of land changed hands this fall and prices have been from $15.00 to $20.00 higher than last year. Best farms and improvements sell at $160.00 to $175.00 per acre.

Report of Fair—Held October 10-13. Taken altogether it was a most satisfactory fair.

GRUNDY.

E. V. M'BROOM, GRUNDY CENTER, OCTOBER 26, 1912.

General Condition of Crops and Season—Crops considerably better than in former years. The season was quite backward in the spring; quite dry and hot in the early summer and wet during the fall.

Corn—Exceptionally good crop; yielding from 40 to 75 bushels per acre.

Oats—Considerably above the average. The average yield was about 50 bushels per acre; quality good.

Wheat—About twenty-five per cent of the wheat winter killed. What survived yielded about twenty bushels per acre. Quality good.

Rye—Not much raised. Yield about 20 bushels per acre and quality good.

Barley—Yield and quality of barley good; yielding about forty to forty-five bushels per acre.

Flax—Only a few fields of flax in the county.

Buckwheat—Not much grown.

Millet—Very little grown. What there is is yielding heavily.

Sorghum—Only raised in small quantities but yielding heavily.

Timothy—Above the average. What was cut for hay yielded about a ton to a ton and a half per acre. That cut for seed yielded about eight bushels.

Clover—First crop yielded about two and one-half tons per acre; second crop about one and one-half tons per acre.

Prairie Hay—Little or no prairie hay in the county.

Other Grains and Grasses—A few small fields of alfalfa; yield only fair.

Potatoes—Yielded from 125 to 200 bushels per acre; quality good.

Vegetables—All vegetables did well.

Apples—Almost a complete failure.

Other Fruits—Only a few cherries and an abnormal crop of plums and grapes.

Cattle—A shortage of cattle during the summer although the fall demand has been quite well supplied. About the usual number on feed.

Horses—The supply of horses seems to be considerable greater than the demand.

Swine—Only about 75 per cent of what it was last year. About 20 per cent have already died from cholera.

Sheep—About normal. Not raised extensively but we have the best grades and they are well cared for.

Poultry—Considerable attention paid to poultry raising. About 20 per cent more being raised than last year.

Bees—Winter very severe on bees. Not much attention being paid to them.

Drainage—No county drainage. Considerable tiling being done.

Lands—Gradually increasing; being listed all the way from $150.00 per acre to $225.00. The fertility of the soil has been considerably improved of late.

Report of Fair—Held September 17-19th. The exhibits in most departments were much larger than in former years. The attendance was good considering the weather, there being between seven and eight thousand in attendance.

GUTHRIE.

J. A. MCLAUGHLIN, GUTHRIE CENTER, OCTOBER 29, 1912.

Corn—Bumper crop. Wet season.

Oats—Fair.

Wheat—Very good.

Millet—Good.

Sorghum—Good.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Other Grains and Grasses—Fair.

Potatoes—Fair.

Vegetables—Good.

Apples—Poor.

Other Fruits—Good.

Cattle—Scarce.

Horses—Not plentiful.

Swine—Too much hog cholera.

Sheep—Good. Not very many.

Poultry—Average.

Bees—Fair.

Drainage—Good.

Other Industries—Medium.

Lands—High.

Report of Fair—Dates 24-27, 1912. Rained some every day.

HANCOCK.

R. J. MC MILLEN, BRITT, OCTOBER 19, 1912.

General Condition of Crops and Season—In general very good.

Corn—Most of the corn well out of the way of frost. The yield will be from 50 to 65 bushels.

Oats—Very heavy, yielding from 50 to 90 bushels.

Wheat—Not much raised. Did not seem to fill well.

Rye—Small patches grown; yield good.

Barley—Very little grown but a good crop.

Flax—Best crop we have ever had. Yielded as high as 20 bushels per acre.

Buckwheat—Small patches raised, mostly for private use.

Millet—Big crop for feed; not much threshed.

Sorghum—None raised.

Timothy—Big fields threshed out and yielded heavy. Price dropped considerably.

Clover—None raised.

Prairie Hay—A very good crop of lowland hay.

Potatoes—Big yield; quality good; price low. Being shipped out by carloads.

Vegetables—Plentiful.

Apples—Not any.

Other Fruits—Cherries and plums a big crop; small berries also good.

Cattle—High price and in good condition.

Horses—Selling high. Supply fair.

Swine—A great many raised. Very high price and no disease.

Sheep—Few raised.

Poultry—Raised in big bunches.

Bees—But few bees kept.

Drainage—Six big ditches drain the county well.

Lands—Big advance over last year and quite a little changing hands.

Report of Fair—Held September 2-6th. Had fair crowds but we don't seem to get the support of the county. Taken too much as a one town affair.

HARDIN.

H. S. MARTIN, ELDORA, OCTOBER 10, 1912.

Corn—Heavy yield; some corn hurt by frost.

Oats—40 to 75 bushels.

Wheat—Winter wheat went 20 to 40 bushels; spring wheat 15 to 20.

Rye—Fair.

Barley—Good.

Timothy—Average.

Clover—Fair.

Prairie Hay—None, with the exception of slough or marsh hay.

Potatoes—Good quality; light yield.

Apples—Light crop.

Other Fruits—Good.

Cattle—Good condition; scarce.

Horses—Average.

Swine—About an average.

Sheep—Not many here.

Poultry—Average.

Lands—A good deal changing hands. Selling from $100.00 to $200.00 per acre.

Report of Fair—Held September 3-6.

HARRISON.

A. B. HASBROOK, MISSOURI VALLEY, OCTOBER, 1912.

General Condition of Crops and Season—A very favorable season. Excellent crops.

Corn—A larger crop than for many years.

Oats—Better than for many years but only fair.

Wheat—A bumper crop, both as to yield and quality. Also a larger acreage than in former years.

Rye—Very little rye was raised but the yield and quality were good.

Barley—Almost none produced.

Buckwheat—Very little grown.

Millet—What little was raised was of good quality and abundant yield.

Sorghum—Principally raised for forage.

Timothy—Little produced. Crop cut short by dry weather in June.

Clover—This crop not extra owing to dry weather.

Prairie Hay—Less every year. Rainy weather has been unfavorable to the harvesting of this crop and much of the hay is of inferior quality.

Potatoes—Fair crop; quality good. Potatoes have been an uncertain crop for years. Dry weather usually cuts the crop short.

Vegetables—All kinds are abundant; quality good. All melons exceptionally good.

Apples—A very light crop; quality only fair.

Other Fruits—All small fruits abundant; pears yielded well.

Cattle—The leading beef breeds are Herefords, Short Horns and Red Polled. The Jerseys are the favorites for dairying although some other breeds are raised.

Horses—Percherons are more numerous than any other breed. The present high prices for horses tends greatly to increase the production of horses in this county.

Swine—The mortgage lifters. Great numbers are raised. Duroc Jersey is the favorite breed. Poland Chinas come next.

Poultry—The poultry show at the fair was not up to former years.

Drainage—A great interest manifested in drainage and much of the swamp area has already been reclaimed.

Lands—Have increased in value greatly.

Report of Fair—Held September 24-27. Bad weather made it almost a failure. We had but small exhibits and a very small attendance.

HENRY.

JOHN A. BAXTER, WINFIELD, OCTOBER 28, 1912.

General Condition of Crops and Season—A very prosperous year.

Corn—Good. Averaging from 30 to 70 bushels per acre.

Oats—Fair crop; averaging from 25 to 40 bushels; good quality.

Wheat—Very little sown but fair crop and good quality.

Rye—None to speak of.

Barley—Good. Very little sown.

Flax—None grown.

Buckwheat—None sown.

Millet—Good. Very little sown.

Sorghum—Fair.

Timothy—Very light crop; too dry.

Clover—Light crop.

Prairie Hay—None.

Other Grains and Grasses—Medium.

Potatoes—About one-fourth crop; too dry.

Vegetables—Fair but too dry.

Apples—Some early apples but very few winter ones.

Other Fruits—Medium.

Cattle—Not so many raised on account of high price of corn and hay.

Horses—About an average.

Swine—Not so many as usual on account of high price of feed. A good many rushed to market early.

Sheep—About as usual.

Poultry—About 25 per cent above the average.

Bees—Poor.

Drainage—Very little in this vicinity as most of the ground is tiled.

Other Industries—Very prosperous.

Lands—Very little changing hands as few care to sell. Prices range from $100 to $200 per acre.

Report of Fair—Held August 6-9, 1912. A very good fair.

HENRY.

C. H. TRIBBY, MT. PLEASANT, OCTOBER 12, 1912.

General Condition of Crops and Season—A very prosperous season.

Corn—Large acreage and all well matured with the exception of a little late planted. I doubt if there has ever been so many bushels of good corn grown in the county.

Oats—Best crop in ten years; good grain and fine straw.

Wheat—Very little sown. Fall wheat good.

Rye—Best for many years. Only sown for the purpose of seeding ground to grass.

Barley—Good crop but small acreage.

Flax—None.

Buckwheat—Too dry for crop. Not much sown.

Millet—Sown when oats or corn fails. Very little this season.

Sorghum—Very little.

Timothy—Good crop of seed but dry weather in April injured the grass in some localities.

Clover—Same as timothy.

Other Grains and Grasses—Blue grass, our profitable crop, was cut as other grasses.

Potatoes—Good crop and good quality.

Vegetables—Fine and plentiful.

Apples—Light crop; good quality.

Other Fruits—Heavy crop of plums and grapes. Cherries and berries were light.

Cattle—Scarce. Land prices have soared so high our farmers decided they could not afford to raise calves and are now paying the west fabulous prices for feeders.

Horses—Plenty of young horses but our good draft colts are picked up so young one can hardly find a load of good matured horses.

Swine—Lots of young hogs. Can change from a scarcity to an over supply within six months if the prices suit.

Sheep—Many sold last year on account of scarcity of pasture.

Poultry—A good season for poultry.

Bees—But few.

Drainage—Best in the state. Every farm tiled to suit the lay of the ground.

Other Industries—Keeping pace with other counties in the state in regard to factories, good roads, etc.

Lands—Real estate has not advanced so much as in the two years previous but has not gone back. Any fairly improved farm is worth $200.00 per acre and many up to $225 or $250.

Report of Fair—Held August 13-16. Rain on Tuesday kept exhibitors back and reduced the crowd on Wednesday. We feel that the fair was a great success considering the weather.

HOWARD.

N. B. DOOLITTLE, CRESCO, NOVEMBER, 1912.

General Condition of Crops and Season—Very prolific year for all crops, except tree fruits.

Corn—Extra good. Estimated at 30 to 45 bushels per acre.

Oats—Yield 40 to 80 bushels; average 55 bushels per acre.

Wheat—Not much sown; yield 12 to 20 bushels per acre.

Rye—Average yield 32 bushels per acre.

Barley—Great crop harvested. Worth 50 to 60 cents per bushel.

Flax—Good yield of early flax; late flax worthless.

Buckwheat—But little sown. Wet weather injured a great deal.

Millet—Good. Only a small amount grown.

Sorghum—But little sown.

Timothy—Good. Hay 1¾ tons per acre; seed 3 to 10 bushels per acre.

Clover—None. The drouths of 1910-11 spoiled the seeding.

Prairie Hay—But little left.

Other Grains and Grasses—Not any.

Potatoes—From 150 to 300 bushels per acre. Many carloads shipped to market at 20 to 25 cents per bushel.

Vegetables—Onions to ship. Other vegetables plentiful.

Apples—Very few.

Other Fruits—Berries a good supply.

Cattle—Thinned out by two years of drouth and high prices. About two-thirds of the 1912 calves shipped for veal.

Horses—1,723 sold and shipped from the county at an average price of $177.00.

Swine—625 carloads sold and shipped from the county. Twenty-three M. per car, at an average of $70 per thousand pounds, making $1,006,250.

Sheep—The drouths of 1910-11, coupled with the fear of a lower tariff on wool has reduced the sheep to a minimum.

Poultry—Great increase in chickens and a small increase in ducks, geese and turkeys.

Bees—Nearly killed out by severe winters.

Drainage—On the increase. Several miles of tile put in and more projected. No drainage district in county.

Other Industries—Prospering.

Lands—On the increase in price. A raise of 12 per cent in 1912. Prices now range forty to one hundred and fifty dollars per acre.

Report of Fair—No fair.

HUMBOLDT.

W. B. WEST, HUMBOLDT, OCTOBER, 1912.

General Condition of Crops and Season—Spring conditions reasonably favorable, expecially so for small grain. A little too cold for corn and wet, cold, weather during the growing season has retarded growth. Most of the early planting matured before frost.

Corn—Large acreage and good stand. Frost the latter part of September will make the crop 10 per cent soft.

Oats—Largest yield in many years, 60 to 90 bushels per acre, average better than 60.

Wheat—More winter wheat sown than formerly. Yield from 25 to 35 bushels per acre. Spring wheat about 20 bushels.

Rye—Very little raised.

Barley—Only limited amount raised. Mostly for local use. Average about 40 bushels per acre.

Flax—I know of none.

Buckwheat—None.

Millet—Good yield but not much grown.

Sorghum—Few fields grown for fodder and some put in the silo.

Timothy—Drouth last year reduced acreage. Some good fields but less than usual.

Clover—Heavy catch on spring seeding.

Other Grains and Grasses—Considerable amount of sugar beets grown in the northern part of the county. Making good money for the growers this year.

Potatoes—Big crop; average 200 bushels per acre.

Vegetables—Large quantity of all kinds.

Apples—Practically none.

Other Fruits—Lots of plums and small fruits.

Cattle—About average number but there is a tendency to reduce the herds.

Horses—Breeding of draft horses on the increase and practically no roadsters raised.

Swine—Not so many spring pigs as usual on account of cold weather. No disease.

Sheep—Not many raised but they do well.

Poultry—About an average number raised. A good many pure bred flocks.

Bees—None.

Drainage—Considerable being done but not as much as three or four years ago.

Lands—Advancing rapidly in value; scarce at $125.00 to $175.00 per acre.

Report of Fair—Held September 10-14. Fair exhibits; good attractions and attendance better than for several years.

IOWA.

J. P. BOWLING, VICTOR, OCTOBER 7, 1912.

General Condition of Crops and Season—Corn and small grain a good crop.

Corn—Good.

Oats—Good.

Wheat—Not much raised.

Rye—Good.

Barley—Good.

Flax—None raised.

Buckwheat—Fair.

Millet—Not much raised.

Sorghum—Not much raised.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Potatoes—Good. A big crop.

Vegetables—Good.

Apples—A failure.

Other Fruits—Plums exceptionally good. Other fruits all good.

Bees—Not many in this vicinity.

Report of Fair—Held at Victor on August 13-15. Weather was fine and the fair a success.

IOWA.

CHAS. FLETCHER, WILLIAMSBURG.

General Condition of Crops and Season—Generally good.

Corn—Above the normal yield. Quality very good.

Oats—Especially good, both as to quality and yield.

Wheat—Not extensively grown.

Timothy—Not the usual yield but quality especially good.

Clover—Where not pastured too close in the fall it was particularly good.

Potatoes—About normal.

Vegetables—Generally good, both as to yield and quality.

Apples—Will average about one-third of the 1911 crop.

Other Fruits—An enormous yield of plums.

Cattle—The farmers in general have pure bred cattle. Polled Angus, Herefords and Short Horns take the lead.

Horses—This section of the county has exceptionally good horses but we note farmers are becoming careless in the breeding of good roadsters.

Swine—This industry is kept up to the full standard of high breeding quality. Free from disease for the past four years in this section.

Sheep—Not many raised.

Poultry—One of the leading industries. The egg and poultry shipments from this county are immense.

Drainage—The drainage system is practically complete.

Other Industries—We have a tomato canning factory which is doing a very good business.

Lands—Advanced in value. Will average $200 per acre throughout Iowa county.

Report of Fair—Held at Williamsburg on September 10-12. The exhibits were not quite up to the usual standard in regard to number but the quality was excellent. A successful fair.

IOWA.

ALEX M'LENNAN, MARENGO, OCTOBER 17, 1912.

General Condition of Crops and Season—Generally good crops; yield above the average and quality good.

Corn—Possibly 100 per cent. Good quality. Some replanted fields were hurt some by the frost.

Oats—Good quality and more than the average yield per acre, about 45 bushels per acre.

Wheat—More winter wheat raised this year than usual. Good quality and an average yield of about 25 bushels.

Rye—But very little grown but the yield and quality was good.

Barley—Very little raised.

Flax—None raised.

Buckwheat—None raised.

Millet—Not much raised in this county.

Sorghum—Very little grown.

Timothy—Above the average this year. A great deal cut for seed.

Clover—Good crop.

Prairie Hay—None in the county.

Other Grains and Grasses—Some patches of alfalfa being started.

Potatoes—More than the average acreage. Rather below the average in yield; quality good.

Vegetables—Only raised for home use.

Apples—Very few this year.

Other Fruits—An abundant crop of plums, grapes, cherries and berries.

Cattle—Only the best grades are being bred. Aberdeen Angus, Herefords and Short Horns predominate. Considerable Dakota stuff is being shipped in for feeding.

Horses—Only the best are being raised here now; mostly heavy work horses. More colts this year than for a number of years. Good demand and high prices.

Swine—Fine lot of pigs and all well bred. Herds are in splendid condition. No cholera in the county.

Sheep—More sheep in the county this year than usual and they are in splendid condition.

Poultry—More being raised each year and we have the best varieties.

Bees—Very few in the county.

Drainage—Considerable low and wet land has been tiled this year. Most of the sloughs are now tiled.

Other Industries—Woolen and flour mills report an average business; canning factories have done the biggest business they have ever known. Creameries have also done well.

Lands—Building improvements on the increase; more attention given to rotation of crops, fertilizing and intensive farming. Lands range in price from $85 to $225 per acre.

Report of Fair—Held at Marengo on September 17-19. Weather was unfavorable; attendance smaller than usual and exhibits, with the exception of cattle, larger than usual.

JACKSON.

W. D. MC CAFFREY, MAQUONETA, SEPTEMBER, 1912.

General Condition of Crops and Season—Very good.

Corn—Good.

Oats—Good.

Wheat—Not much raised but what we had was good.

Rye—Not much raised but good.

Barley—What we had was good.

Flax—None raised.

Buckwheat—Not much raised.

Millet—Not much grown.

Sorghum—None raised.

Timothy—Light crop.

Clover—Fair crop.

Prairie Hay—None grown.

Potatoes—Good yield.

Vegetables—Big yield.

Apples—Very light crop.

Other Fruits—Plums in abundance. Other fruits light.

Cattle—Plentiful.

Horses—Quite a number raised.

Swine—Very good this year.

Sheep—Not many raised.

Poultry—Lots of poultry this year.

Bees—Have done well this season.

Other Industries—Lime kilns, button factory, creamery and broom factory all doing a good business.

Report of Fair—Held at Maquoketa September 3-6. We had good weather and the largest attendance for a number of years.

JASPER.

F. E. MEREDITH, NEWTON, OCTOBER 15, 1912.

General Conditon of Crops and Season—Good.

Corn—Good.

Oats—Excellent.

Wheat—Excellent.

Rye—Good.

Barley—None.

Flax—None.

Buckwheat—I know of none.

Millet—Not any.

Sorghum—None that I know of.

Timothy—Fair.

Clover—Fair.

Prairie Hay—None.

Potatoes—Fair.

Vegetables—Good.

Apples—Very poor.

Other Fruits—Good.

Cattle—Good.

Horses—Good.

Swine—Good.

Sheep—Good.

Poultry—Good.

Bees—Good.

Drainage—Excellent.

Other Industries—Good.

Lands—Very high.

Report of Fair—Held August 19-22. Largest number of entries we ever had; fine weather, attendance not quite so large as last year but just as much money taken in from all sources. Very good races and good attractions. We built a fine new grandstand, and had it not been for this we would have had a nice balance on hand.

JEFFERSON.

SANFORD ZEIGLE.

Corn—100 per cent on basis of a ten year average.

Oats—120 per cent.

Wheat—50 per cent. Much of it winter killed.

Rye—Same as wheat.

Barley—100 per cent.

Flax—None raised.

Buckwheat—None to speak of.

Millet—120 per cent.

Sorghum—100 per cent.

Timothy—100 per cent.

Clover—40 per cent.

Prairie Hay—None.

Potatoes—100 per cent.

Vegetables—125 per cent.

Apples—25 per cent.

Other Fruits—125 per cent.

Cattle—50 per cent.

Horses—100 per cent.

Swine—60 per cent.

Sheep—75 per cent.

Poultry—115 per cent.

Bees—30 per cent.

Lands—Advanced 50 per cent in the last ten years.

Report of Fair—Held September 7-9th.

JOHNSON.

GEO. A. HITCHCOCK, IOWA CITY, OCTOBER 25, 1912.

General Condition of Crops and Season—Good.

Corn—Above the average yield; good quality.

Oats—Bumper crop; threshed in good condition.

Wheat—Not a large acreage but yield and quality extra.

Rye—Very little sown; quality above the average.

Flax—None.

Buckwheat—Very little sown.

Millet—Good yield; not much sown.

Timothy—Very light crop; rather better than last year. Fine quality.

Clover—Below the average.

Prairie Hay—Very little cut in this county.

Potatoes—Good yield; extra good quality.

Vegetables—Good.

Apples—A failure.

Other Fruits—With the exception of cherries a good yield and fine fruit.

Cattle—Not as many as usual.

Horses—About the usual number but not many for sale; prices high.

Swine—More than the average. Some disease reported.

Sheep—About the usual number.

Poultry—Usual number raised.

Bees—Very few in the county.

Drainage—More put in every year.

Other Industries—In a flourishing condition.

Lands—Prices high, ranging from $75.00 to $250.00 per acre. Average about $100.00.

Report of Fair—Held August 27-30. Attendance was not as good as expected. Too many other attractions near the fair dates.

JONES.

L. W. RUSSELL, ANAMOSA, OCTOBER, 1912.

General Condition of Crops and Season—The best in years.

Corn—Large acreage and fine crop. 100 bushels to the acre very common.

Oats—Fine crop; average acreage.

Wheat—Very little.

Rye—Very little; a very good crop.

Barley—Very little.

Flax—None.

Buckwheat—Not any.

Millet—I know of none.

Sorghum—None.

Timothy—A very good crop.

Clover—Fine.

Prairie Hay—Not any.

Potatoes—Small yield.

Apples—Not any.

Cattle—High prices have cleaned them out pretty well.

Horses—Increasing in number.

Swine—As usual.

Sheep—Very few.

Poultry—Business increasing all the time.

Bees—A few.

Drainage—High price of land is compelling the farmer to drain his land so that he can farm every available acre.

Other Industries—Very little manufacturing in this county.

Lands—Price has advanced from $25.00 to $50.00 per acre this year.

Report of Fair—We think the fair this year the best in the history of the association. Very good exhibits in all departments and good attractions. Held August 12-16.

KEOKUK.

GEO. A. POFF, WHAT CHEER, OCTOBER 23, 1912.

General Condition of Crops and Season—Splendid.

Corn—The largest crop in many years.

Oats—Excellent condition; large yield.

Wheat—Increased acreage and a large yield.

Rye—None.

Barley—Not any.

Flax—None.

Buckwheat—Not any.

Millet—None.

Sorghum—Very little; splendid quality.

Timothy—Good yield and good quality.

Clover—Good crop; excellent quality.

Prairie Hay—Medium crop.

Potatoes—Not as heavy a crop as usual. They are being shipped in from other places.

Vegetables—Excellent.

Apples—None to speak of.

Other Fruits—A scarcity of small fruit, with the exception of strawberries, which were very plentiful.

Cattle—We have a number of fine herds and the quality is growing better.

Horses—Several large breeders of fine horses.

Swine—We had a splendid exhibit at our fair.

Sheep—Good quality but not many raised here.

Poultry—We have a number of fancy breeders. The display at the fair was the largest we have had for many years.

Bees—Lots of bees; great quantities of honey sold.

Drainage—Increasing. An immense amount of tiling being done by the farmers.

Other Industries—What Cheer is looking forward to great things from their new quarter of a million dollar sewer pipe plant.

Lands—Advancing. Good improved land worth from $100 to $200 per acre.

Report of Fair—Held September 23-26. A bad week. We have paid all bills.

KOSSUTH.

T. P. HARRINGTON, ALGONA, OCTOBER 8, 1912.

General Condition of Crops and Season—Spring a little late with a little more rain than necessary. Rainfall all season was perhaps more than average and abundant for all crops.

Corn—Acreage larger than usual and yield will average 60 bushels per acre; 95 per cent sound. Will be the largest total yield in the history of the county.

Oats—An excessive growth of straw and it lodged badly. Yield will average about 50 bushels per acre and quality good.

Wheat—Acreage larger than usual; quality very good. Yield about 20 to 25 bushels per acre.

Rye—Very little grown.

Barley—But little grown for market; quality good.

Flax—Small acreage; yield and quality good.

Buckwheat—Very little grown; yield and quality good.

Millet—Yield and quality good; not much grown.

Sorghum—Very little raised except for cattle feed; yield very large.

Timothy—A little thin on account of hard winter and drouth of last fall. Above an average crop.

Clover—About the same as timothy.

Prairie Hay—Very little left. Yield very heavy.

Other Grains and Grasses—Good.

Potatoes—Crop very good; more than enough for home demand.

Vegetables—Very good.

Apples—Very few apples this year; almost a total failure.

Other Fruits—Small fruit abundant; good crop of plums and cherries.

Cattle—Improving. A marked tendency toward dairy cattle and the dairy industry generally.

Horses—Prices are high. The breeds are improving rapidly, especially the heavy draft horses. Automobiles seem to have put the roadsters out of business.

Swine—More than ever before; no disease reported.

Sheep—Not extensively raised.

Poultry—More than usual. More attention being paid to the breeding of poultry every year.

Bees—Not many.

Drainage—This county is doing more drainage than any other county in the state.

Other Industries—There is little in the way of manufacturing products. Tile factory doing a good business.

Lands—Values have increased from $10.00 to $25.00 per acre in the last year. There is a strong demand by actual homeseekers from the east and south and prices will doubtless go higher.

Report of Fair—Held September 17-20. We had rain on Monday, Tuesday and Wednesday which cut down the stock exhibits but on the whole the fair was a decided success.

LEE.

CHRIS HAFFNER, DONNELLSON, OCTOBER 23, 1912.

General Condition of Crops and Season—Season very favorable; crops good.

Corn—Good quality; large yield.

Oats—Best quality and yield we have had for years.

Wheat—Very light crop.

Rye—Very little raised.

Barley—None grown.

Flax—None grown.

Buckwheat—Very little raised.

Millet—Some sown; good yield.

Sorghum—Fair crop.

Timothy—Fine quality. Fair crop.

Clover—Not a heavy crop. Fair.

Prairie Hay—Not any.

Potatoes—Light crop.

Vegetables—Good crop.

Apples—Very fair crop.

Other Fruits—Fair crop.

Cattle—Shorthorns and Polled Angus predominate.

Horses—Roadsters and Percherons leading breeds.

Swine—Chester White, Duroc Jerseys and Poland Chinas predominate.

Sheep—Shropshires and Delaines take the lead.

Poultry—Great interest taken in this industry and nearly all breeds represented.

Bees—Very few.

Drainage—Good.

Lands—Average from $100 to $200 per acre.

Report of Fair—Held on August 21-23. The exhibits and racing were good, the attendance large and the fair a success financially.

LEE.

JOHN WALLJASPER, WEST POINT, OCTOBER, 1912.

General Condition of Crops and Season—Generally above the average.

Corn—Above the average. On account of the late season planting was late.

Oats—Way above the average. The cool, wet weather of May and June was just right for oats and it yielded the heaviest for any year during the last 20 years.

Wheat—Not so much sown as usual. Winter wheat was hurt by the late March snow and freeze but notwithstanding all these drawbacks the yield was fair.

Rye—Very little sown; quality fair.

Barley—Scarcely any sown.

Flax—None sown.

Buckwheat—Not much sown but this promises to do well.

Millet—Some millet sown. Good crop this year.

Sorghum—A good crop.

Timothy—A good average crop. More sown than in former years. Hay about two-thirds of a full yield.

Clover—Clover did not do well on account of the severe winter.

Prairie Hay—None.

Other Grains and Grasses—Blue grass and other grains and grasses did remarkably well.

Potatoes—A good crop, good quality.

Vegetables—A good crop and fine quality.

Apples—A medium crop; good quality.

Other Fruits—Cherries and plums were good, peaches a failure and pears still suffering from the blight which has attacked a number of pear trees during the last few years.

Cattle—Somewhat scarce on account of the farmers selling their surplus stock on account of the severe drouth.

Horses—Command a good price and farmers are paying considerable attention to the breeding. The colt show at our fair was one of the best in the state.

Swine—This is the "old reliable standby" for our farmers. All are in a healthful condition at this time.

Sheep—Farmers are paying more attention to sheep and flocks may be seen all over the county. On many farms they are taking the place of cattle.

Poultry—Every farmer raises chickens. An important industry.

Bees—Not much attention paid to this industry.

Drainage—In localities where necessary drainage districts are established.

Other Industries—Railroad shop, saw mills, woolen mills, iron works and other smaller factories are doing a good business. An immense dam has been completed across "The Father of Waters" at Keokuk. This is one of the largest, if not the largest, of any dam of its kind in the world.

Lands—Booming and will still go higher, making it imperative for the owners to raise more bushels to the acre. This is the only way to solve the high cost of living.

Report of Fair—Held at West Point on September 24-27, and it was a "hummer." The colt show on the second day was a grand success as was the corn show. The fair association made enough above their expenses to pay for a new horse barn, 32x80 feet and also many other necessary improvements.

LINN.

E. W. PENLY, CENTRAL CITY, OCTOBER 7, 1912.

General Condition of Crops and Season—Good, with the exception of hay and late corn. Large amount of frosted corn still being cut up. Hay was damaged by cut worms.

Corn—80 per cent. 20 per cent being injured by frost. We would have had a bumper crop but for that. Will average about 55 bushels.

Oats—Average acreage; splendid quality and average yield. About 45 to 50 bushels per acre.

Wheat—Not much sown; poor quality. All spring wheat.

Rye—Good quality and yield from 15 to 20 bushels per acre.

Barley—Not as good as usual. Yield about 20 bushels per acre.

Flax—Not any.

Buckwheat—None.

Millet—Heavy yield but frost caught a great deal of it.

Sorghum—About the usual amount sown. Good quality and yield.

Timothy—Light except new seeding.

Clover—Same as timothy.

Prairie Hay—Not any.

Potatoes—Much better than last year. 100 per cent.

Vegetables—Good.

Apples—Only once in a while an orchard with any apples.

Other Fruits—Good.

Cattle—Not many cattle on feed and getting scarce.

Horses—Selling cheaper at sales this fall. Believe the price will be good again this spring.

Swine—About the usual number and in good condition. Two herds report cholera.

Sheep—More being raised and going into winter in fine shape.

Poultry—Normal supply and healthy.

Bees—Better than for several years.

Drainage—Lots of tile being used. Two factories are being kept busy to supply demand.

Other Industries—In fine condition.

Lands—Advanced 25 per cent this summer.

Report of Fair—We had a good attendance, a nice line of stock and splendid attractions. We consider it a successful fair.

LINN.

C. A. PATTEN, MARION, SEPTEMBER, 1912.

General Condition of Crops and Season—Crops extra good. Season about two weeks behind average years.

Corn—80 per cent. Three-fourths of the crop out of the way of frost.

Oats—80 per cent.

Wheat—80 per cent.

Rye—80 per cent.

Barley—85 per cent.

Flax—Not much raised in this county.

Buckwheat—75 per cent. Very little grown.

Millet—None raised.

Sorghum—70 per cent.

Clover—50 per cent.

Prairie Hay—Not any.

Other Grains and Grasses—Pastures good.

Potatoes—75 per cent.

Vegetables—80 per cent.

Apples—25 per cent.

Other Fruits—75 per cent.

Cattle—80 per cent.

Horses—80 per cent.

Swine—80 per cent.

Sheep—65 per cent.

Poultry—85 per cent.

Bees—50 per cent.

Drainage—Quite a bit of tiling put in but no open ditches.

Lands—Average price per acre about $125.00.

Report of Fair—Held August 20-23, 1912. About an average fair.

LOUISA.

O. M. CAVIN, COLUMBUS JUNCTION, OCTOBER 21, 1912.

General Condition of Crops and Season—Fair.

Corn—Large acreage and quality fair to good.

Oats—Good quality.

Wheat—Poor.

Rye—Fair.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—Very little.

Sorghum—Not much.

Timothy—Fair.

Clover—Fair.

Prairie Hay—Not any.

Potatoes—Good.

Apples—Poor.

Cattle—Feeding cattle scarce and high.

Horses—Improving in quality. Not many for sale.

Swine—Not as many as usual on account of cholera last year.

Sheep—Very few.

Poultry—Good.

Bees—Very few.

Report of Fair—Held September 4-6. Attendance was good. Stock exhibits light.

LUCAS.

J. C. WILLIAMSON, CHARITON, NOVEMBER 25, 1912.

General Condition of Crops and Season—This has been a very favorable year for the farmer. Crops of all kinds were good and are bringing a fair price.

Corn—One of the largest crops ever harvested. Some of it a little soft but most of it is fine. Selling at 35 cents at this date.

Oats—A good crop was harvested, yielding from 25 to 65 bushels per acre.

Wheat—The best crop ever seen in this county, averaging from 20 to 50 bushels per acre.

Rye—Very little grown but quality good.

Barley—Not any.

Flax—Not any.

Buckwheat—Very little grown.

Millet—Most of the millet was cut for seed. A fine yield.

Sorghum—Not much raised and most of it was frosted.

Timothy—Nearly all cut for seed, making from 5 to 9 bushels per acre. Hay made from ¾ to 1½ tons per acre.

Clover—Not a great deal as it has been hard to get a stand for several years. The 1912 seeding looks fine.

Prairie Hay—Not very much prairie hay left.

Other Grains and Grasses—Blue grass has made a good growth and has furnished pasture nearly all the year.

Potatoes—An average crop but not enough to supply the county.

Vegetables—A good season for gardens and the supply of vegetables exceeded the demand.

Apples—Very few; most of them winter killed.

Other Fruits—Cherries were plentiful, strawberries a good crop. All other fruit was light.

Cattle—A great scarcity of cattle and they are selling high at sales. Nearly everyone seems to have more feed than stock.

Horses—The usual number of colts but market horses are scarce.

Swine—Quite a good deal of cholera in the county, which accounts for shortage of pigs.

Sheep—Sheep have done well.

Poultry—Fine.

Bees—A fair year.

Drainage—Not much tiling being done.

Lands—Increasing in value and rents are getting higher. Land is selling from $60 to $150 per acre; some small tracts still higher.

LYON.

C. W. BRADLEY, ROCK RAPIDS, OCTOBER 15, 1912.

General Condition of Crops and Season—All crops heavy; best we have had for twenty years.

Corn—At least one-third of the acreage is corn. The crop matured well and the average yield will be at least 50 bushels per acre and the quality is first class.

Oats—Very heavy and good quality. Average yield 60 bushels to the acre.

Wheat—Light acreage of wheat. Yield average 20 bushels per acre; quality good.

Rye—Very light acreage. Good quality and yield about 25 bushels per acre.

Barley—Fairly good acreage. Quality first class and yield about 45 bushels per acre.

Flax—Little, if any, grown in this county.

Buckwheat—Very little in the county.

Millet—Fair acreage. Good quality and heavy yield.

Sorghum—Light acreage. Good quality and heavy yield.

Timothy—Medium acreage. Quality first class and yield good.

Clover—Medium acreage. Yield good and quality first class.

Prairie Hay—Very good as to yield and quality.

Potatoes—Heavy acreage; good quality. Yield 200 bushels per acre.

Vegetables—All classes of vegetables very heavy and of first class quality.

Apples—Not any this year.

Other Fruits—Plums a very heavy crop and quality first class. Grapes were also good but only a light acreage.

Cattle—In better condition than usual but not so many on hand on account of the light hay crop last year.

Horses—Plenty of horses and in first class condition. Quality high grade.

Swine—Very good condition. A great many of them.

Sheep—In good condition and the average number.

Poultry—In excellent condition and above the average number.

Bees—Very few in this county.

Drainage—Natural drainage good. No swamp lands in the county and little tiling necessary.

Other Industries—Few manufacturers in the county except concrete stone machinery and cement products. All of these are doing a prosperous business.

Lands—Lands of the very highest quality. Soil a deep black loam underlaid with clay sub soil. Gently rolling, perfectly drained and average from $150 to $200 per acre.

Report of Fair—Held September 3-6. Weather conditions were good and attendance the largest in the history of the fair.

MADISON.

S. A. HAYS, WINTERSET, OCTOBER 1, 1912.

General Condition of Crops and Season—Favorable season.

Corn—Extra good. Mostly out of the way of frost. Some fields were a little late and a few were a light stand but we will have a great crop.

Oats—Good crop. Good quality and will average from 40 to 80 bushels per acre.

Wheat—Winter wheat extra good; crop averaging from 25 to 60 bushels per acre.

Rye—Not much grown but a good crop.

Barley—Good crop but not much raised.

Flax—None grown.

Buckwheat—I know of none.

Millet—Not much sown but a good crop.

Sorghum—Very little grown.

Timothy—A good yield of hay and of fine quality. Quite a good deal threshed for seed.

Clover—Has done well but too early to know much about the seed crop.

Prairie Hay—None to speak of.

Other Grains and Grasses—Blue grass pastures have been fine practically all season.

Potatoes—Good average crop but some trouble with bugs early in the season.

Vegetables—Very good and abundant.

Apples—No apples.

Other Fruits—An abundance of cherries and plums, a few peaches and some grapes.

Cattle—Scarcity of cattle in the county. High prices and want of feed have led farmers to sell short. Now with an abundance of feed they are in great demand at high prices.

Horses—Supply is short with a large demand for good horses. Prices are higher than usual.

Swine—Not quite so many pigs as usual and some disease. Demand for feeding large.

Sheep—More farmers keeping small flocks than heretofore. Sheep will take the place of cattle to some extent as feeders.

Poultry—Bringing good prices. Not many turkeys. Eggs sold for a high price all summer.

Bees—Not many kept. A very good season for them.

Drainage—Farmers are learning the value of tiling and are putting in a great deal each year.

Other Industries—This is an agricultural and stock growing county. We have immense beds of limestone and await more favorable transportation facilities and development.

Lands—Good corn land in demand. More land is changing hands this year than a year ago and at advancing prices.

Report of Fair—Held September 17-19. We had fine exhibit of horses, grains and vegetables. Only a fair exhibit of cattle and poor exhibit of hogs, sheep and poultry. Weather was bad and the attendance very poor.

MAHASKA.

H. D. RHINE, NEW SHARON, OCTOBER 22, 1912.

General Condition of Crops and Season—Crops generally good. Fall plowing is progressing rapidly and the ground is in fine condition.

Corn—Above the average in quality and quantity. Some early corn is being cribbed.

Oats—Extra good crop.

Wheat—Best in years, yielding from 20 to 40 bushels per acre.

Rye—Not much raised in this county.

Barley—None.

Flax—Not any.

Buckwheat—Very little.

Millet—Small crop.

Sorghum—Average crop.

Timothy—Good average crop.

Clover—Good.

Prairie Hay—None.

Other Grains and Grasses—Clover seed very good.

Potatoes—Good average crop.

Vegetables—Plenty.

Apples—Almost a failure.

Other Fruits—Berries were plentiful, peaches and pears a failure. Plums were an exceptionally good crop.

Cattle—Short supply.

Horses—Plentiful.

Swine—Spring crop light; fair crop of fall pigs. Cholera reported in some localities.

Sheep—Average crop.

Poultry—Good crop.

Bees—Nearly all winter killed. What were left gathered a good supply of honey.

Lands—Going up in price. Farms are changing hands at from $150 to $225 per acre.

Report of Fair—Held September 16-19. Attendance was good considering the threatening weather at the beginning of the fair. Financially the fair was a success.

MARION.

CHAS. PORTER, PELLA, OCTOBER 30, 1912.

General Condition of Crops and Season—Weather conditions very favorable and I believe we have had the best crop we have had in the history of the county.

Corn—The results of good seed has shown that no one engaged in corn raising can be neglectful in saving their seed. Great advancement has been made and considerable interest is taken at the corn tables at our fair.

Oats—The careful selection of seed and the using of the press drill brought good results and the oat crop was of very fine quality and yield.

Wheat—More fall wheat than usual. An exceptionally good crop, both as to quality and yield.

Rye—Not a large acreage; fair yield. This crop is used principally for hog feed.

Barley—Not much sown. This crop has not given good results for the past few years. This year the yield was good and quality fine.

Flax—None grown.

Buckwheat—But little sown.

Millet—Those who put in this crop realized a large yield per acre.

Sorghum—Grown more extensively for syrup and seed. Those engaged in raising this crop find ready sale for the product and seed at good prices.

Timothy—Hay yielded from 1½ to 2 tons per acre and most all hay was put up in fine shape. Present price being $10.00 per ton.

Clover—The severe winter did a great deal of damage to new clover fields. However, that which wintered well brought large returns in hay and seed.

Prairie Hay—Not any.

Other Grains and Grasses—Blue grass soon takes all other grasses in our pastures. We have had very good pastures this season.

Potatoes—Small acreage to what we had 25 years ago but the prices are now high and will stimulate the interest in this crop. The crop this year was very good.

Vegetables—Very good.

Apples—Insects and pests almost ruined the crop.

Other Fruits—All small fruits and berries were a good crop of fine quality. Plums were abundant.

Cattle—Not the usual number. Not many will be put on feed.

Horses—More attention paid to the breeding of draft horses. The automobiles are taking the place of the roadsters. Many horses are shipped out of this county each year.

Swine—Improved breeds. Poland China and Duroc Jerseys are the leading breeds.

Sheep—Mutton sheep principally raised but there are large flocks fed from western markets with good results.

Poultry—More poultry is being raised each year. The past year was favorable for the raising of poultry.

Bees—Favorable year but many reported heavy losses last winter.

Drainage—Tile is used extensively and where tile was put in a few years ago there were splendid crops this year.

Other Industries—Our canning factory put up a nice lot of tomatoes and pumpkins. The salt pickling works have also done a very good business.

Lands—Have increased in value about 10 per cent during the past year. At least farms are selling at that advance, prices running from $60.00 to $275.00 per acre.

Report of Fair—Held September 24-27. The exhibits were good in all departments but after entry day rain kept our patrons at home and attendance was not as large as anticipated. However, we came out very well, considering the weather.

MARSHALL.

W. M. CLARK, MARSHALLTOWN, OCTOBER 15, 1912.

Corn—A good average crop. Some late corn injured by frost.

Oats—Good yield and good quality.

Wheat—Winter wheat excellent; spring wheat fair.

Rye—None raised.

Barley—Not much raised but that was good.

Flax—Not any.

Buckwheat—None.

Millet—Not much raised. Good crop.

Sorghum—None raised except for private use.

Timothy—Heavy crop and fine quality.

Clover—Heavy, both first and second cuttings.

Prairie Hay—Not any.

Other Grains and Grasses—Exceptionally good crop.

Potatoes—Average yield and good quality.

Vegetables—Large crop.

Apples—Very poor.

Other Fruits—Plums and cherries a large crop; grapes fair and berries average.

Cattle—In good condition. More pure bred stock each year.

Horses—Improving.

Swine—Not as many as usual but quality very good.

Sheep—Increasing.

Poultry—Raised in large numbers and we have all the leading breeds. Marshall county holds a mid-winter show, which is a success.

Bees—None for commercial purposes.

Drainage—But little drainage in this county.

Lands—Still increasing in value and production of crops.

Report of Fair—Held September 9-13. We had two rainy days but the attendance exceeded that of any former year. Exhibits were better than usual and as a whole we consider the fair a success.

MARSHALL.

H. M. WEEKS, RHODES, OCTOBER 2, 1912.

General Condition of Crops and Season—Wet weather in the spring hindered the work some but the season has been generally favorable and crops good.

Corn—A bumper crop in this section. More than the average crop both as to yield and quality.

Oats—Very good; yielding from 35 to 65 bushels per acre in this vicinity.

Wheat—But little spring wheat raised. The acreage for winter wheat is increasing each year. We had a good crop this year, the yield being from 30 to 40 bushels per acre.

Rye—Hardly any grown in this district.

Barley—Not any.

Flax—Not any.

Buckwheat—None.

Millet—Only sown where the land was too wet in the spring for other crops. Good where raised.

Sorghum—Not any.

Timothy—A good crop and put up in fine condition; yielding from 1½ to 2½ tons per acre.

Clover—New seeding was damaged some last winter but the crop is generally good and secured in good shape. The yield of seed good. The second crop fine.

Prairie Hay—Not any.

Other Grains and Grasses—None raised to any extent. Some alfalfa and Kaffir corn.

Potatoes—Injured by dry weather just when they needed rain. The potatoes are of good quality and free from rot but the yield light.

Vegetables—All a good crop; fine quality.

Apples—A very small crop, especially in old orchards. Some young orchards have a fair crop.

Other Fruits—Small fruits generally good, grapes and plums a large crop. Peach trees nearly all killed last winter. A fine crop of pears.

Cattle—Less than usual and prices high. Many feeders have been shipped in from Omaha and Kansas City. Pastures have been good and cattle are in splendid condition.

Horses—Owing to high prices the past few years there seems to be a shortage of horses to ship out. They are in good condition and free from disease. More attention is paid to the breeding of draft horses.

Swine—A great many farmers have lost nearly all their pigs through sickness.

Sheep—Not many kept in this county. Some small flocks are brought in from the west to be fed for market.

Poultry—A leading industry.

Bees—Not many kept.

Drainage—Nearly all the swamp land in this county has been reclaimed.

Other Industries—Cement work is the leading industry. Our creameries have had a successful year.

Report of Fair—Held on September 24-27, at Rhodes. We had bad weather, only one good day. Therefore the attendance was light. Stock exhibits were the lightest we have ever known. We shall be behind a little financially but will go on in hope of better success in the future.

MILLS.

I. J. SWAIN, MALVERN, SEPTEMBER 15, 1912.

General Conditions of Crops and Season—Above normal.

Corn—The prospect is most favorable for an unusually good yield of corn.

Oats—Good yield and quality much above the average.

Wheat—Excellent quality and yield about normal, averaging from 20 to 45 bushels.

Rye—Good yield and quality.

Barley—Good yield; quality impaired by excessive smutting.

Flax—None grown.

Buckwheat—Not any.

Millet—Fine crop.

Sorghum—None grown.

Timothy—Normal yield and secured in good condition. The seed crop above normal.

Clover—Good crop.

Prairie Hay—About normal quantity. Quality inferior.

Other Grains and Grasses—Alfalfa a good crop and secured in prime condition. Acreage greatly increased.

Vegetables—All vegetables normal in yield. Quality excellent.

Apples—Almost a failure; very light crop.

Other Fruits—Abundant and of superior quality.

Cattle—Thrifty. No disease. Great interest in the blooded classes.

Horses—Generally thrifty. A few cases of meningitis in some localities but not prevalent as yet.

Swine—In serious, if not alarming condition. A healthy herd is rare.

Sheep—Very little attention given to breeding of sheep.

Poultry—A great deal of interest taken in poultry raising.

Bees—No interest taken in this industry.

Drainage—Receiving increased attention in the way of straightening streams and tiling the low lands.

Other Industries—No important manufactures except flour mills and canning factory.

Lands—Still advancing in price and considerable changing hands.

Report of Fair—Held August 6-9. Best exhibits and entertainment we have ever had. We had about the average attendance and would have had more if the weather had not been so uncertain.

MITCHELL.

CARL H. SPAANUM, OSAGE, OCTOBER 23, 1912.

General Condition of Crops and Season—Good.

Corn—Yield good. A little early to make an estimate.

Oats—Average yield 55 bushels per acre. Quality good.

Wheat—Yield about 20 bushels per acre.

Barley—Above the average.

Flax—Not much grown but reported a good average crop.

Timothy—Good quality and yield.

Potatoes—Way above the average. More than we have had for years.

Vegetables—Have been plentiful and are of good variety.

Apples—No apples.

Other Fruits—A good many plums, currants, gooseberries, etc.

Cattle—Not very many cattle. A great many shipped in for feeding.

Horses—About the average.

Swine—Plenty of hogs.

Sheep—Very few.

Poultry—About the average.

Bees—Very few.

Drainage—A great deal of tile draining being put in.

Other Industries—Sugar beet crop above the average.

Lands—Selling from $50.00 to $200.00 per acre. Great advance this season.

Report of Fair—Held September 24-27. Exhibits were good but we had bad weather and the attendance was small.

MONONA.

C. E. BLANCHARD, ONAWA, OCTOBER 25, 1912.

General Condition of Crops and Season—With the exception of apples all were bumper crops.

Corn—Fine but late.

Oats—Fair.

Wheat—Good.

Rye—Fair.

Barley—Good.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Potatoes—Average.

Vegetables—Fine.

Apples—Not many.

Other Fruits—Small fruit fine.

Cattle—Fine.

Horses—Fine.

Swine—Fine; some cholera.

Poultry—Good.

Drainage—$1,000,000 expended to date and worth the money.

Other Industries—Prosperous.

Lands—Prices on the increase.

Report of Fair—Held September 10-13. Exhibits were fine but we were rained out.

MONROE.

LOREN PERRIN, ALBIA, OCTOBER 2, 1912.

General Condition of Crops and Season—Crops in very good condition except a few late pieces of corn, which were caught by frost. Pastures are good but a little cool for growing.

Corn—Good. Yielding from 35 to 80 bushels per acre. A great many silos being put up and filled.

Oats—Good quality and yield about 40 bushels per acre.

Wheat—Fall wheat very heavy, making from 25 to 52 bushels per acre. Spring wheat not so good, averaging from 14 to 20 bushels.

Rye—Not much grown.

Barley—None.

Flax—None.

Buckwheat—Not any.

Millet—Very little grown.

Sorghum—Good crop where sown.

Timothy—Fair crop of hay saved in good condition. Lots of seed threshed, making from 4 to 10 bushels per acre. Hay averaged about 1¼ tons per acre.

Clover—First crop heavy but it was a little dry for the second crop. Well filled with seed.

Prairie Hay—None.

Potatoes—Early ones a fair yield but the late ones will not be so good on account of being too dry.

Vegetables—Good. All kinds plentiful.

Apples—Very few and of poor quality.

Other Fruits—Very scarce, except plums, which were very plentiful and of fine quality.

Cattle—A shortage of cattle. They are selling at high prices.

Horses—Not many for sale; quite a good many colts raised this year.

Swine—Not very plentiful. A good many pigs died last spring.

Sheep—Not many in the county.

Poultry—A good many chickens raised but not many turkeys.

Bees—Very few.

Other Industries—Coal mining is a big industry in Monroe county.

Lands—Not much changing hands but price is going up all the time.

Report of Fair—Held September 24-27. People were taking quite an interest in it but the weather was very cold and rainy and this cut down the attendance.

MONTGOMERY.

M. H. RATHBONE, RED OAK, OCTOBER 16, 1912.

General Condition of Crops and Season—Splendid.

Corn—In good shape and will be ready to crib by October 20th. Good outlook for an average of 40 to 60 bushels per acre.

Oats—Good yield and splendid quality. Average 35 to 40 bushels per acre.

Wheat—General average 30 bushels, quality fair.

Sorghum—Very little in this county but good what there is.

Timothy—Very light except in extreme eastern portion of the county, where they have a big crop this season. Not much threshed yet.

Clover—Small yield.

Potatoes—Crop good for early potatoes but late ones very poor.

Vegetables—Fine; better than for several years.

Apples—Very few. Most trees died out last winter.

Other Fruits—Small fruits were a fair crop.

Cattle—Below the average for this county.

Horses—More raised in 1912 than for several years. Market high.

Swine—Cholera has injured the stock hogs considerably. More Durocs than any other breed.

Sheep—Very few.

Poultry—Lots of them. A very good season.

Report of Fair—Held September 4-6. Attendance light. Rained nearly every night. Exhibits were better than for years.

MUSCATINE.

H. H. JOHNSON, WILTON JUNCTION, OCTOBER 1, 1912.

General Condition of Crops and Season—Good.

Corn—Largest yield in the history of the county.

Oats—Same as corn.

Wheat—Not extra.

Rye—Good.

Barley—Poor yield.

Flax—Not any.

Buckwheat—Fair.

Millet—Good.

Sorghum—Good.

Timothy—Fair.

Clover—Good.

Prairie Hay—None.

Other Grains and Grasses—Good.

Potatoes—Large yield; good quality.

Vegetables—Fine.

Apples—Not a great many.

Other Fruits—Plentiful.

Cattle—Not a large number.

Horses—Good horses and plenty of them.

Swine—Not many. Cholera has been very prevalent.

Sheep—Not a great many in the county.

Poultry—A great number and many of them pure bred.

Bees—Fair.

Drainage—Good.

Other Industries—Good.

Lands—Good; value $150.00 to $250.00 per acre.

Report of Fair—Held August 13-15 at Wilton Junction. Good fair; fine racing. We were a little short on concessions.

MUSCATINE.

W. H. SHIPMAN, WEST LIBERTY, OCTOBER 15, 1912.

General Condition of Crops and Season—Crops in the best condition they have been for years. The season was probably a little backward to start with but favorable weather overcame the adverse conditions.

Corn—First class. A small per cent injured by frost. The yield will be good and the quality fine.

Oats—A bumper crop, both as to yield and quality.

Wheat—Larger acreage than common and quality good.

Rye—Acreage light but quality good.

Barley—A big crop and of fine quality.

Flax—None raised.

Buckwheat—Very little raised.

Millet—Heavy crop; small acreage.

Sorghum—Light crop but good quality.

Timothy—A light stand but well filled out and of good quality. Much of it threshed for seed.

Clover—A light stand.

Prairie Hay—None.

Other Grains and Grasses—A number are experimenting with alfalfa with very satisfactory results.

Potatoes—A good crop and good quality.

Vegetables—Garden vegetables a good crop. None raised for market.

Apples—Very light crop; quality inferior to other years.

Other Fruits—Small fruits were a good crop. Grapes a good crop and of fine quality.

Cattle—Increased demand for beef breeds but the number and quality are below other years. Good demand for breeding stock. Increased interest in dairying and cows sell high.

Horses—A good demand for good horses and sell at good prices.

Swine—Demand was never better. Crop of pigs was good. Some cholera.

Sheep—Very little change.

Poultry—Increased interest in good birds and better care taken of them. No disease.

Bees—Very scarce.

Drainage—Much tiling being done. Larger tile being used than formerly.

Lands—Very little for sale. Prices out of sight.

Report of Fair—Held August 19-22 and was a success in every way. Good weather and the best attendance in the history of the fair.

O'BRIEN.

GEORGE GARDNER, SHELDON, SEPTEMBER 10, 1912.

General Condition of Crops and Season—Crops were slow in getting started on account of continued cold weather in the spring, but later the conditions were favorable and nearly everything caught up and was ready for harvest at the usual time. Better crops were never grown in O'Brien county.

Corn—At this time there is every indication that there will be a bumper crop of corn. The stand is unusually good, the ears are large and well filled, and an early frost is the only thing that can prevent a "bumper crop."

Oats—A heavy stand of straw, well filled heads, and weight considerably in excess of machine measure and estimate.

Wheat—Largest acreage for many years and good yield.

Rye—Comparatively little grown but that was good.

Barley—Large acreage and good yield. Many fields were colored on account of rain before stacking.

Flax—Very little sown but yield was fair.

Buckwheat—None grown here for market.

Millet—Very little sown.

Sorghum—None produced hereabouts.

Timothy—A very fine crop.

Clover—An unusually heavy crop and considerable saved.

Prairie Hay—Very scarce in this county but what we had was heavy and fine quality.

Other Grains and Grasses—Some farmers are experimenting with alfalfa and most of them are of the opinion that it can be grown here profitably.

Potatoes—An average yield of late potatoes but early varieties were below the average. There will be some potatoes here for market.

Vegetables—Unusually good this season.

Apples—Very scarce this season.

Other Fruits—Plums plentiful. Cherries and small garden fruit very good.

Cattle—Looking fine. This section of the country has many fine herds of the best blooded stock to be found anywhere. The farmers are interested in improving their herds and the prospects are bright for this developing into one of the best stock sections of Iowa.

Horses—Farm horses are of superior quality; high grade draft breeds. There are also a few standard bred horses.

Swine—Numerous. High prices of recent years have induced the farmers to go into the hog business on a large scale and has made it a source of profit. Some of the best strains of Poland China, Duroc Jersey and other breeds are produced here and shipped as stock hogs to all parts of the country.

Sheep—Comparatively few are raised but the ones who have gone into the business find it profitable. The flocks are well bred and are looking fine.

Poultry—This is a poultry country. The common "barn yard fowl" has disappeared and well bred birds are plentiful.

Bees—Few swarms kept.

Drainage—A great deal of drainage has been done during the past several years.

Other Industries—Flouring mills, and cement and tile factories doing a prosperous business.

Lands—Prices range from $100.00 to $175.00 per acre. Several small tracts of from 40 to 50 acres have sold at $200.00 per acre. Prices have advanced steadily for several years.

Report of Fair—Held at Sheldon August 27-30. The weather, except the last day, was very favorable and the attendance was very good. There was a good program and the people were well pleased with the exhibition.

O'BRIEN.

J. B. MURPHY, SUTHERLAND, OCTOBER 12, 1912.

General Condition of Crops and Season—Crops good, best we have had for years. Rainfall below normal at this season.

Corn—About two weeks late. Indications are that we will have a large yield of good corn.

Oats—Away above the average in quantity and weight.

Wheat—Very little raised but what we had was good. More winter wheat is being raised than heretofore.

Rye—None to speak of.

Flax—None to speak of.

Buckwheat—Not any.

Millet—Heavy crop. Very little raised.

Sorghum—Good.

Timothy—The best in years; excellent for both hay and seed.

Clover—Average crop and well filled with seed.

Prairie Hay—None.

Potatoes—Good but not so large as the average.

Vegetables—Good and plentiful.

Apples—None.

Other Fruits—Small fruits and plums excellent.

Cattle—Scarce. In good condition and high priced.

Horses—Good. More than usual.

Swine—Not quite so many pigs as usual. Some sickness.

Sheep—We have several small flocks and they seem to be doing well.

Poultry—About the average lot. Some disease.

Bees—Mostly killed during the winter of 1911-12.

Drainage—Good.

Other Industries—None.

Lands—Advancing in price rapidly.

Report of Fair—Held September 4-6. The weather was good. The attendance was not very good on account of other attractions held at the time of the fair.

PAGE.

A. W. GOLDBERG, SHENANDOAH, SEPTEMBER 5, 1912.

General Condition of Crops and Season—"The best ever."

Corn—Ideal prospects.

Oats—Heavy crop. Somewhat hurt in shock by rains.

Wheat—Heavy crop but hurt in many places on account of rain.

Rye—Good but a limited acreage.

Barley—Same as rye.

Flax—Not any.

Buckwheat—Not any.

Millet—Practically none.

Sorghum—Not enough to report on.

Timothy—Good crop but hurt in the shock.

Clover—Looks as though there would be a good crop at this date.

Prairie Hay—Fair and good.

Other Grains and Grasses—Good.

Potatoes—Fair to good.

Vegetables—Good.

Apples—Very light.

Other Fruits—Plums, cherries and grapes very good; others a failure.

Cattle—Light supply.

Horses—Normal.

Swine—Average.

Sheep—Light.

Poultry—Late but a heavier average than last year.

Bees—Very few.

Drainage—Good.

Lands—High priced and hard to get.

Report of Fair—August 12-16. We had rainy weather which caused a loss in attendance and receipts of about 35%.

PAGE.

J. C. BECKNER, CLARINDA, OCTOBER, 1912.

General Condition of Crops and Season—Favorable season.

Corn—Will be more than an average crop. The early corn is of extra fine quality.

Oats—The best I have ever known in Iowa.

Wheat—A very heavy crop and large acreage.

Rye—Practically none raised.

Barley—Very little raised.

Flax—Not any.

Buckwheat—None.

Millet—Very little raised.

Sorghum—Splendid crop.

Timothy—Extra good quality. Not quite as much as usual on account of being killed by last year's drouth.

Clover—Quality fine but small acreage and yield.

Prairie Hay—Very little raised.

Other Grains and Grasses—Bluegrass was extra all year.

Potatoes—About an average crop and of fine quality.

Vegetables—A fine crop.

Apples—Very few this year.

Other Fruits—Cherries were plentiful and of extra fine quality. Short crop of berries.

Cattle—Not as many as we should have but we have some very fine herds.

Horses—We have a number of as fine horses as any county can boast of.

Swine—Several large herds of pure bred swine in the county. More cholera prevalent than for many years and there are not so many pigs as usual.

Sheep—Quite an interest taken in this industry.

Poultry—There are thousands of fine birds of many different breeds raised here.

Bees—Not much interest in this industry.

Drainage—Thousands of dollars are being spent in straightening the Nodaway, East River and The Tarkio. Many tile are also being used.

Other Industries—Lawn mower factory at Clarinda doing a very good business.

Lands—Selling from $125.00 to $300.00 per acre, depending on location and improvements.

POCAHONTAS.

J. P. MULLEN, FONDA, OCTOBER 5, 1912.

General Condition of Crops and Season—Good.

Corn—Above the average yield but not fully matured, possibly 25 to 30% hurt by frost.

Oats—Yield from 40 to 70 bushels per acre; quality good.

Wheat—Fine.

Rye—No great amount grown in this county.

Barley—Good.

Flax—Not much grown; yield good.

Buckwheat—Fair.

Millet—Heavy crop.

Sorghum—Good.

Timothy—Best yield in many years; quality good.

Clover—Good.

Prairie Hay—Heavy crop.

Other Grains and Grasses—Good.

Potatoes—Fair yield; quality good.

Vegetables—Abundant.

Apples—Poor crop.

Other Fruits—Abundant.

Cattle—Scarcity of young stock.

Horses—About the average.

Swine—A nice lot of pigs.

Sheep—Increasing.

Poultry—About the average number of chicks. Not so many turkeys as usual.

Bees—Poor.

Drainage—Progressing.

Other Industries—Cement and tile factory doing a flourishing business.

Lands—Prices increased about 25 or 35%.

Report of Fair—Held August 6-10. Very good exhibits but attendance was not up to standard on account of wet weather.

POTTAWATTAMIE.

CALEB SMITH, AVOCA, OCTOBER 19, 1912.

General Condition of Crops and Season—Very dry until about the first of September.

Corn—Twenty-five per cent better than the year 1911.

Oats—Very good; yield as high as 70 to 75 bushels per acre.

Wheat—Better yield and quality than has been threshed the last 30 years; 44 bushels winter wheat and 24 spring wheat reported threshed.

Rye—Very little raised in this county.

Barley—Good; not much raised.

Flax—None raised.

Buckwheat—Not any.

Millet—Not much raised.

Sorghum—Not much grown.

Timothy—Light crop on account of dry weather early in season.

Clover—Same as timothy.

Prairie Hay—Late rains helped it some but not an average crop.

Other Grains and Grasses—Alfalfa about an average crop. More of it raised as farmers begin to realize its value.

Potatoes—25% better than the 1911 crop.

Vegetables—Quality and quantity above the average.

Apples—Very light crop.

Other Fruits—Plums abundant, grapes average, cherries plentiful. All berries about 80% of an average crop.

Cattle—In good condition and prices high.

Horses—Are in good demand and each year there is an increase in the number of foals and the quality is improving.

Swine—At present writing they are doing well. Some loss by disease earlier in the season.

Sheep—Not many raised in this county but a good many are shipped in and fed during the fall and winter months and farmers realize a good profit therefrom.

Poultry—One of our leading industries. Thousands of dollars worth of poultry and eggs are sold each year.

Bees—Not enough kept to supply the home demand for honey.

Drainage—County is generally rolling and very little tiling being done.

Other Industries—Very little being accomplished outside of farming and stock raising.

Lands--Farms are increasing in value and are selling from $125 to $175 per acre. Rents have increased about 25% the past few years.

Report of Fair—Held at Avoca September 24-27. The exhibits and attractions were the best in the history of the fair but the attendance was the poorest on account of the threatening and rainy weather. Some of the races and attractions were called off on account of the muddy track. We expect, however, to meet all bills.

POWESHIEK.

J. T. CESSNA, GRINNELL, OCTOBER 10, 1912.

General Condition of Crops and Season—Normal.

Corn—Heavy. Average 40 to 45 bushels per acre, with some of it going as high as 100 bushels per acre. Early corn very good but late corn somewhat damaged by frost.

Oats—Very good; average from 45 to 50 bushels per acre.

Wheat—Very good; average from 20 to 25 bushels per acre.

Rye—None grown.

Barley—Good, averaging about 45 bushels per acre.

Flax—None grown.

Buckwheat—Not any.

Millet—Good.

Sorghum—Not any.

Timothy—Good. Seed crop good.

Clover—Good. Seed crop short.

Potatoes—Good.

Vegetables—Good.

Apples—None.

Other Fruits—Fair.

Cattle—Shortage, probably 90 per cent of normal. Farmers are using more land for corn and less for pastures.

Horses—Average.

Swine—Shortage, probably 75 per cent of normal.

Sheep—Very few raised.

Poultry—Large crop.

Lands—Still advancing. Price ranges from $75.00 to $300.00 per acre, according to location, quality and improvements.

Report of Fair—Held September 2-5th. Weather bad first two days. The last two days were fine and our attendance good. Our attractions were splendid and everyone seemed satisfied.

POWESHIEK.

JAMES NOWAK, MALCOM, OCTOBER 28, 1912.

General Condition of Crops and Season—One of the best crop years we have had in the history of the county.

Corn—The spring was late and planting delayed but a good stand was secured. About 10 per cent soft on account of early frost in September.

Oats—Never better in the history of the state. Yields from 60 to 100 bushels per acre are reported.

Wheat—A good yield of both spring and fall wheat. Quality good.

Rye—Good yield and quality.

Barley—A good crop.

Flax—None raised in this county.

Buckwheat—Good yield but only a small acreage.

Millet—Also a good yield.

Sorghum—A fine crop.

Timothy—Above the average. Lots of seed and cheap.

Clover—Good crop.

Prairie Hay—None here.

Other Grains and Grasses—All other grains and grasses cultivated produced a good yield.

Potatoes—An average crop.

Vegetables—A good crop of all varieties.

Apples—Light.

Other Fruits—Plums abundant and cherries a fair crop. Berries fair.

Cattle—Not an oversupply. Prices are high.

Horses—Demand exceeds the supply. Prices good.

Swine—Cholera prevalent and many hogs are being shipped out before they are matured.

Sheep—Not many raised here. Prices good.

Poultry—Healthful condition and one of our leading industries. Prices are good.

Bees—Some killed last winter by excessive cold.

Drainage—More scientific attention being paid to drainage.

Other Industries—A large number of silos being put up. Canning factories doing a big business.

Lands—Going steadily up, selling from $100 to $200 per acre.

Report of Fair—Held August 19-20. On account of rain and threshing season attendance was not average. Good exhibits.

RINGGOLD.

L. F. HALL, TINGLEY, SEPTEMBER 11, 1912.

Corn—In fine condition. With ten days good weather will be out of the danger of frost. The yield will be exceptionally large.

Oats—Good quality; yield 35 to 70 bushels per acre.

Wheat—Good quality; yield 24 to 40 bushels.

Rye—Not much grown.

Barley—Very little grown.

Flax—None grown.

Buckwheat—Small acreage. Will be good if present weather conditions continue.

Sorghum—Good.

Timothy—Heavy yield of hay and seed.

Clover—Heavy yield of hay. Second crop for seed looks good.

Prairie Hay—None to report on.

Other Grains and Grasses—Bluegrass heavy this year.

Potatoes—Early ones fair yield and good quality. Late ones looking well.

Vegetables—Abundant yield of all kinds.

Apples—Very few.

Other Fruits—Small fruits average.

Cattle—Scarce and hard to buy.

Horses—Improvement in breeding. Average number in the county.

Swine—Healthful condition. Only an average number for market.

Sheep—More interest being taken in sheep raising. More than usual in this vicinity.

Poultry—On the increase. More attention given to the raising of better fowls.

Bees—Not much attention given to bee culture.

Drainage—Some tiling being done.

Lands—Being farmed better and additional improvements being made. Increasing in value.

Report of Fair—Held September 5-6. Original dates were Sept. 4-6, but we were obliged to change on account of rainy weather. Under the circumstances we think we did well.

SAC.

GUS STROHMEIER, SAC CITY, OCTOBER 23, 1912.

General Condition of Crops and Season—Crops quite good and season fair. Frost about the usual time and rainfall average.

Corn—Large acreage and most of it good. Late corn hurt by frost.

Oats—Good yield and good quality. Late oats the best.

Wheat—Winter wheat a fine crop; good yield and fine grade.

Rye—Good crop but not much sown.

Barley—Good quality but small acreage.

Flax—Not much put in here.

Buckwheat—Not much grown here.

Millet—Fine and considerable raised. Of the best grade.

Sorghum—Two mills here and they were kept busy in the season.

Timothy—Fine quality and quite a bit threshed for seed.

Clover—Good crop and seeded well. Both crops fine and heavy.

Prairie Hay—Very little here.

Other Grains and Grasses—Alfalfa good and more raised than usual.

Potatoes—Good. Fair yield.

Vegetables—Plentiful and good.

Apples—Very short crop.

Other Fruits—Plums abundant and grapes fine.

Cattle—In good condition but not the usual number.

Horses—Doing fine. A great many colts raised this year.

Swine—Fine herds and all are doing nicely.

Sheep—Not doing very well.

Poultry—In good condition and lots of them. Prices good.

Bees—Not many but the honey is of the best grade.

Drainage—Our land is mostly tiled.

Other Industries—We have a sweet corn factory, a tile factory and a stone factory, all doing a good business.

Lands—Selling at the highest prices and changing hands. Rented land is scarce, renting from $4.00 to $7.00 per acre.

Report of Fair—Held August 13-16. Good attractions and good attendance and fine racing.

SHELBY.

FRED FRAZIER, HARLAN, SEPTEMBER 9, 1912.

General Condition of Crops and Season—All crops are at or above normal yield. The season has been very dry in the main but lately we have had plenty of rain.

Corn—About 90% of a stand; acreage increased about 15% and yield will be above the average in case frost stays off until October 1st.

Oats—Acreage about normal and yield the best in ten years.

Wheat—Normal acreage and yield fully up to normal.

Rye—None grown except in patches. Good yield.

Barley—About average yield and acreage a little above normal.

Flax—None grown.

Buckwheat—But little grown. I do not know of any.

Millet—About the usual amount sown. The best crop we have had in years.

Sorghum—Not much grown except for home consumption. Some sown for forage and will yield a good crop.

Timothy—Better than last year but hardly up to the normal yield. Secured in fine condition.

Clover—Not the average yield nor acreage. The past two seasons have been too dry for seeding.

Prairie Hay—But little left.

Other Grains and Grasses—Considerable alfalfa has been sown. The stand is pretty good and it promises to be a success.

Potatoes—Drouth has hurt this crop some. There will be plenty for home use.

Vegetables—Good crop of all kinds.

Apples—About 5% of a crop.

Other Fruits—Grapes and plums a full crop, others only fair.

Cattle—Fewer cattle are owned in this county than a year ago. High prices this season have taken too many cows out of the county. The usual number of calves are on hand.

Horses—Good horses are high priced and scarce. More than the usual number of foals.

Swine—Not the usual number. No disease.

Sheep—A neglected industry. Some being shipped in to feed.

Poultry—Plenty of fowls. Young chickens are late but there are more than usual.

Bees—Only small interest taken in this industry.

Drainage—A great deal being done.

Other Industries—No new enterprises have been started during the past year.

Lands—Values have not increased much if any. They range in price from $100 to $250 per acre.

Report of Fair—Held August 19-22. The best fair ever held in the county.

SIOUX.

J. G. VAN DER BERG, ORANGE CITY, OCTOBER 15, 1912.

General Condition of Crops and Season—Generally in good condition.

Corn—Good crop; yield above the average and well matured.

Oats—Very good quality and heavy yield.

Wheat—Good, averaging from 15 to 25 bushels per acre; quality good.

Rye—Not any.

Barley—Fair. Average 20 to 40 bushels per acre.

Flax—Not any.

Buckwheat—None.

Millet—Good. About the usual amount.

Sorghum—Very little raised.

Timothy—Below the average crop.

Clover—Fair crop. Killed somewhat by the severe winter.

Prairie Hay—None.

Potatoes—Very good; large acreage.

Vegetables—Very good.

Apples—Not any. Total failure this year.

Other Fruits—Very little.

Cattle—In very good condition but not as many as in 1911. A good many young cattle were shipped last fall on account of scarcity of feed.

Horses—In good condition and about the usual number.

Swine—In good shape. The number of pigs is a good average.

Sheep—Not as many as last year. Most farmers disposed of them last fall on account of scarcity of feed.

Poultry—The usual number. Prices high.

Bees—Not many here. Honey of good quality.

Drainage—This county has a natural drainage.

Lands—Increase in price this year from $25.00 to $50.00 per acre. Selling from $150 to $200 per acre. Our farms are well improved and the soil is first class.

Report of Fair—Fair held September 11-13. Weather and attendance good. Exhibits were very good in all departments.

SCOTT.

EDWARD COLLINS, DAVENPORT, NOVEMBER 25, 1912.

General Condition of Crops and Season—Crops above the average and season favorable.

Corn—Yield about 45 bushels per acre and quality good.

Oats—Good yield, about 35 bushels per acre and quality good.

Wheat—Only a fair yield, about 20 bushels per acre. Quality good.

Rye—Extra good yield and good quality.

Barley—About 35 bushels per acre; quality very good.

Flax—None to speak of.

Buckwheat—But little grown.

Millet—Only a small quantity raised; quality good.

Sorghum—Very little grown.

Timothy—Yield about 1½ tons per acre.

Prairie Hay—Fair yield; good quality.

Other Grains and Grasses—Very little.

Potatoes—Yielded about 100 bushels per acre. The quality as a whole was fair.

Vegetables—A good average yield; good quality.

Apples—Yield about 10%.

Other Fruits—Small fruits good.

Cattle—In a healthful condition and prospects are satisfactory.

Horses—The usual number raised, with a tendency toward increase on account of high prices.

Swine—Conditions are not so good as usual. Cholera has been more or less prevalent. Number raised below the average.

Sheep—Average number raised and they are in a healthful condition.

Poultry—Raised in large numbers and increasing.

Bees—An ordinary year.

Drainage—County is pretty well drained.

Other Industries—Thriving.

Lands—Values tending higher. Sales being made at good figures with ready buyers.

Report of Fair—No fair was held this season.

STORY.

I. O. HASBROUCK, AMES, OCTOBER 28, 1912.

General Condition of Crops and Season—Good.

Corn—Above the average.

Oats—Heavy yield.

Wheat—Good crop; heavy yield.

Rye—Not much raised.

Barley—Very little raised.

Flax—None.

Buckwheat—Very small acreage.

Millet—Some small pieces a big yield.

Sorghum—None.

Timothy—Good crops.

Clover—Good crops, both first and second.

Prairie Hay—None.

Other Grains and Grasses—Not any.

Potatoes—Big yield.

Vegetables—Good.

Apples—Small yield.

Other Fruits—All small fruits good.

Cattle—Farmers not raising many cattle.

Horses—Good.

Swine—Good. Some cholera.

Sheep—Few but good.

Poultry—Good.

Drainage—Most all drained.

Report of Fair—Held October 3, 1912, and proved a big success. The attendance was good and we intend to hold a three day fair next year.

TAMA.

A. G. SMITH, TOLEDO, OCTOBER 4, 1912.

General Condition of Crops and Season—Above the average.

Corn—Better than an average crop. A small amount hurt by frost; not to exceed 10%. A larger acreage than last year.

Oats—15% in excess of average crop and quality excellent.

Wheat—Small amount but of excellent quality. Yield about 20 bushels per acre.

Rye—Small acreage but quality and yield good.

Barley—Small acreage but yield and quality very good.

Flax—I know of none.

Buckwheat—None.

Millet—Small acreage. Yield and quality good.

Sorghum—Only enough for private use grown.

Timothy—Small acreage. Yield and quality good. The hay was thin but of excellent quality, averaging from 1 to 1½ tons per acre.

Clover—None for seed. Hay yielded from 1 to 1½ tons per acre.

Potatoes—Good quality; yield about the average.

Vegetables—Good yield and excellent quality.

Apples—Scarcely any.

Other Fruits—Lots of cherries, plums and berries.

Cattle—Not so many as usual.

Horses—Draft horses are increasing in number and grade.

Swine—Increase in both quality and number.

Sheep—Only small flocks.

Drainage—No drainage districts at all.

Other Industries—We have brick and tile factories, cigar factories and paper and flour mills.

Lands—Excellent land, adapted to general farming and stock raising. Steadily advancing in price. Average price $100 to $125 per acre.

Report of Fair—Date of fair September 17-20. On account of rainy weather our exhibits were not up to the standard, nor was the attendance.

TAYLOR.

F. N. LEWIS, BEDFORD, OCTOBER 27, 1912.

General Condition of Crops and Season—Good.

Corn—Good.

Oats—Good.

Wheat—Better than usual.

Rye—Normal.

Barley—Average.

Flax—Normal.

Buckwheat—About as usual.

Millet—Good.

Sorghum—Good.

Timothy—Good.

Clover—Good.

Prairie Hay—Not much in the county.

Other Grains and Grasses—Good.

Potatoes—Fair.

Vegetables—Good.

Apples—Failure.

Other Fruits—Plums good but everything else almost a failure.

Cattle—Good but not enough in the county.

Horses—Good.

Swine—Good but not so many as usual.

Sheep—Good.

Poultry—Good.

Bees—Good.

Drainage—Fair.

Other Industries—Normal.

Lands—Prices good and advancing.

Report of Fair—No fair held this year.

VAN BUREN.

D. A. MILLER, MILTON, NOVEMBER 15, 1912.

General Condition of Crops and Season—One of the most prosperous seasons we have ever had.

Corn—Bumper crop; will yield from 60 to 100 bushels per acre.

Oats—Excellent quality; big yield.

Wheat—Quality excellent; small acreage.

Rye—Good but only a small acreage.

Barley—None grown here.

Flax—Not any.

Buckwheat—Good.

Millet—Excellent quality; big yield.

Sorghum—Big crop.

Timothy—Largest in years; yielding from 5 to 10 bushels per acre.

Clover—Quality good; yield small.

Prairie Hay—Excellent but not much grown here.

Other Grains and Grasses—Good quality and large yield.

Potatoes—Fair crop.

Vegetables—Excellent crop.

Apples—Three-fourths of a crop.

Other Fruits—Large yield.

Cattle—Large number in the county.

Horses—A great many in the county.

Swine—Prices high. Short in number.

Sheep—Quite a lot of sheep.

Poultry—Getting better all the time.

Bees—Average.

Drainage—Good.

Other Industries—Flourishing.

Lands—Good. Value high.

Report of Fair—Held September 17-20. Good fair; in fact better than usual, both as to attendance and exhibits.

WAPELLO.

H. R. BAKER, ELDON, OCTOBER 28, 1912.

General Condition of Crops and Season—Season a little drouthy during month of August but the general condition of crops is good.

Corn—Very good crop and of good quality. New crop starting out at 40 cents per bushel.

Oats—Unusually good, some yielding as high as 60 bushels per acre and of good quality.

Wheat—About two-thirds winter killed. The rest did fairly well.

Rye—Very little sowed but that did well.

Barley—No barley.

Flax—Not any.

Buckwheat—None.

Millet—Some millet and it made a good crop.

Sorghum—Not much sown.

Timothy—Fine crop; good quality. Price about $12.00 per ton.

Clover—Very good crop.

Prairie Hay—None.

Other Grains and Grasses—Not any.

Potatoes—Light crop; fair quality.

Vegetables—Most of the vegetables did fairly well.

Apples—Small crop; good quality.

Other Fruits—Small fruits a good crop.

Cattle—Very scarce and high priced.

Horses—More plentiful than usual and the prices are high. We have a much better grade of horses than a year ago.

Swine—Healthful condition and plentiful.

Sheep—Not many in this locality.

Poultry—A very paying industry.

Bees—Not any.

Drainage—Considerable drain tile being put in with good results.

Lands—Good lands selling from $100 to $150 per acre.

Report of Fair—Held September 3-6th. Elegant weather and large attendance. The fair was a financial success.

WARREN.

JOE M'COY, INDIANOLA, SEPTEMBER 23, 1912.

General Condition of Crops and Season—The best in 20 years.

Corn—The acreage is as large as usual and the stand good. Indications are that we will have a big yield of good quality.

Oats—Good. 35 to 70 bushels.

Wheat—Good. Will average 35 bushels.

Rye—Good.

Barley—Not much sown.

Flax—Not any.

Buckwheat—None.

Millet—Not much raised but what we have is good.

Sorghum—None.

Timothy—Good.

Clover—Not much.

Prairie Hay—None.

Potatoes—Early ones good; late ones need two weeks longer.

Vegetables—Good.

Apples—Not any.

Other Fruits—Good.

Cattle—Scarce.

Horses—About the average.

Swine—Not as many as usual.

Sheep—Average.

Poultry—Good supply.

Bees—Not many.

Drainage—Not much put in this season.

Lands—Selling at a wide range—$45 to $200 per acre.

Report of Fair—Held Sept. 10-13. Attendance on Wednesday and Thursday best in history but we were rained out on Friday. Good exhibits in most departments.

WAYNE.

LOREN JOHNSTON, SEWAL, NOVEMBER 1, 1912.

General Condition of Crops and Season—Favorable.

Corn—I believe it will yield an average of 40 bushels per acre.

Oats—Yielded all the way from 50 to 88 bushels.

Wheat—Yielded about 25 bushels per acre.

Rye—About 25 bushels an average yield.

Barley—I know of none.

Flax—Not any.

Buckwheat—None to report on.

Millet—Fair crop but not much raised.

Sorghum—Very little grown.

Timothy—Not very heavy on account of the dry weather in May and June.

Clover—Same as timothy.

Prairie Hay—None to speak of.

Potatoes—Light crop.

Vegetables—Light crop.

Apples—Some orchards had no apples at all, others only a few.

Cattle—Scarce and high priced.

Horses—Scarce and high priced.

Swine—A good many hogs but cholera has been prevalent.

Sheep—Not very plentiful.

Poultry—Not as many as usual.

Bees—Not many.

Lands—Selling from $65 to $130 per acre.

Report of Fair—Held September 12-14, 1912.

WEBSTER.

J. C. SAVAGE, FORT DODGE, OCTOBER, 1912.

General Condition of Crops and Season—All crops above the average of the last four years.

Corn—Average per acre 42 bushels. Quality good.

Oats—Good quality and average yield about 39½ bushels per acre.

Wheat—Grown only in about two townships in this county. Quality fair and the average yield about 18¼ bushels.

Barley—Acreage limited. Average per acre 40 bushels.

Flax—I know of none.

Buckwheat—None grown for market.

Millet—Average 1¾ tons per acre. This crop is usually planted where corn or other crops have failed.

Sorghum—Some small patches grown for the purpose of making sorghum. None grown for forage.

Timothy—Quality good; weather conditions ideal for harvesting. Average per acre about 1½ tons.

Clover—Not many fields of clover. Usually grown with timothy.

Prairie Hay—Upland prairie hay is a thing of the past in this county.

Other Grains and Grasses—None.

Potatoes—Not a very good crop. Potatoes are now being shipped in from the north to supply local demand.

Apples—Complete failure in this county.

Other Fruits—Plums and grapes a good crop.

Cattle—Not enough kept in this county to eat the rough feed. They are high in price and it is hard to secure stockers and milk cows.

Horses—More being raised in recent years and most all are using full blood sires.

Swine—Large percent died of cholera.

Sheep—None that I know of in this locality.

Drainage—Is being conducted by the county board of supervisors for the last eight years and is meeting with great approval by more of the tax payers.

Lands—Good land in this county sells for $125.00 to $150.00 per acre.

Report of Fair—Held September 24-27.

WINNESHIEK.

ED BLAKEMAN, DECORAH, OCTOBER 25, 1912.

General Condition of Crops and Season—Good.

Corn—Good.

Oats—Very good.

Wheat—Good.

Rye—Good.

Barley—Good.

Flax—Good.

Buckwheat—Good.

Millet—Good.

Sorghum—Good.

Timothy—Very good.

Clover—Same as timothy.

Other Grains and Grasses—Good.

Potatoes—Good.

Vegetables—Good.

Apples—Not many.

Other Fruits—Fairly good.

Cattle—Good.

Horses—Good.

Swine—Some cholera.

Sheep—Good.

Poultry—Good.

Bees—Not good.

Drainage—Good.

Other Industries—Good.

Lands—Good.

Report of Fair—Held September 10-13, 1912. Quite a successful fair; net profits being about $200.00.

WINNEBAGO.

M. M. THOMPSON, FOREST CITY, SEPTEMBER 26, 1912.

General Condition of Crops and Season—Crops very good and we have had an excellent season.

Corn—Best we have had for many years. The stand is 100 per cent with an increased acreage.

Oats—Yield heavy, ranging from 50 to 70 bushels. Weight very heavy.

Wheat—Not a large acreage but what we had was good.

Rye—But little raised. Better yield and quality than for years.

Barley—Quite a large acreage and a very heavy crop. Yield from 35 to 45 bushels per acre.

Flax—None raised to speak of.

Buckwheat—Very little grown.

Sorghum—Very little raised.

Timothy—Heavy stand, ranging from 2 to 5 tons per acre.

Clover—Fine crop.

Prairie Hay—None.

Potatoes—Large acreage and fine crop. There will be many carloads shipped from this station.

Vegetables—Abundant.

Apples—But few apples this year.

Other Fruits—Plums abundant and of good quality. Berries good.

Cattle—Larger number raised than in former years and they are all in good condition. We have several fine herds.

Horses—We have a large number of fine horses of different breeds.

Swine—More than usual. All in fine condition.

Sheep—Not many raised but they do well.

Poultry—This is a fine shipping point and many carloads of poultry go direct from here to eastern markets.

Bees—Not many raised.

Drainage—Much tiling is being done and there are a great many drainage districts established.

Other Industries—Sweet corn canning factory will put up 800,000 cans this fall. Cement tile and other cement products factory have been doing a big business.

Lands—Have increased in value and are selling at from $90 to $125 per acre with good demand for all improved farms.

WOODBURY.

JAMES HOBBS, MOVILLE, OCTOBER 4, 1912.

General Condition of Crops and Season—More than an average. The soil was in good condition this spring with abundance of rain all season.

Corn—A very heavy crop. A small percent injured by the frost.

Oats—Average yield per acre 50 bushels; good quality.

Wheat—Not much raised.

Rye—None.

Barley—Very good.

Flax—Not any.

Buckwheat—None.

Millet—Heavy crop. Raised only for hay.

Sorghum—I know of none.

Timothy—An excellent crop.

Clover—An abundant crop.

Prairie Hay—None left here.

Other Grains and Grasses—Good.

Potatoes—Good crop.

Vegetables—All kinds abundant.

Apples—Very scarce.

Other Fruits—Plentiful.

Cattle—Not the average number and in very good condition.

Horses—Plentiful, with a tendency toward better grades.

Swine—Not the average number but generally in good condition.

Sheep—Few but of a good grade.

Poultry—Average.

Bees—Scarce.

Drainage—All low lands in the county are being drained by both private and county work.

Other Industries—Controlled by the amount of labor obtainable.

Lands—Rapidly increasing in value.

Report of Fair—Held September 4-6.

WOODBURY.

JOE MORTON, SIOUX CITY, SEPTEMBER 16-21, 1912.

General Condition of Crops and Season—The season has been unusually good. The general opinion of the leading agriculturalists is that never in the history of the county have crop conditions been so satisfactory and the seasons so well adapted for the raising of small grain, grasses and corn.

Corn—The crop of corn this year was unusually good. Some of the corn that was late on account of a backward spring was damaged by frost, but corn that was properly taken care of and good seed used in the planting was far above the average yield.

Oats—The oat crop is the best that has been raised in years. The stand heavy and an exceptionally good quality.

Wheat—Good, particularly winter wheat.

Rye—Acreage is so small that it is impossible to get any definite knowledge in regard to same.

Barley—A good crop in every particular. Quality and stand excellent.

Flax—Very little flax but of good quality and yield.

Buckwheat—No buckwheat.

Millet—Small acreage but an unusually large yield.

Sorghum—Very little grown.

Timothy—Uncommonly large yield and of an exceptionally good quality.

Clover—The clover crop was heavy and good.

Prairie Hay—Practically none in the county.

Other Grains and Grasses—Especially good this year, the seasons being ideal.

Potatoes—Early ones were a little under the average, while the late ones were a good crop.

Vegetables—Above the average.

Apples—The apple crop was somewhat affected by the late spring but is an average crop in this county.

Other Fruits—The fruit crop was about the average and of a good quality.

Cattle—Exceptionally fine condition and feeding has been a profitable occupation owing to the extraordinary condition of the pastures, and the high price of beef cattle.

Horses—High priced and there always is a demand for good work horses.

Swine—This industry has been profitable in this county, owing to the high price of pork and the good quality of feed. There is, however, a cholera epidemic in some localities that is very bad. I am informed that where cholera has shown itself it has been very disastrous and fatal.

Sheep—The sheep have done very well last season. The industry I think is increasing, and many of the farmers are breeding up their flocks and there is an unusual demand for good sheep.

Poultry—Is high priced and poultry raisers report that the year has not been up to the average as there were very few early chickens owing to the cold disagreeable weather during the incubator season.

Bees—The honey crop this year was not up to the average on account of the damage done to bees by the cold winter and very late spring.

Drainage—Nearly all of the low land is properly drained. Nearly every farmer has had more or less tile laid where it is needed.

Other Industries—A prosperous year. There is much manufacturing carried on in Woodbury County and all factories have been run to their full capacity.

Lands—Farm lands range in price from $150 to $250 per acre. There is always a demand for farm land here. The farm land in this county has been well farmed and is above the average in fertility and location.

Report of Fair—Held during the week of September 16th. The weather conditions were as bad as they could be without rain and snow during the entire time. Under the circumstances, however, it was the general opinion that we had an unusually good fair. The exhibits were of a high class and the attendance much better than could be expected.

WORTH.

E. H. MILLER, NORTHWOOD, OCTOBER 25, 1912.

General Condition of Crops and Season—Crops are generally good and the season has been quite favorable.

Corn—Corn made a fine growth where well tended but the late corn was badly injured by the frost.

Oats—A good yield and are of good quality where well cared for.

Wheat—Fair quality and yield from 15 to 20 bushels per acre.

Rye—Very little grown here but it yielded well where sown and was of good variety.

Barley—Yield good but color poor.

Flax—A good crop and yielded from 5 to 15 bushels per acre.

Buckwheat—Fine crop but not much sown.

Millet—A big crop; large yield.

Sorghum—Not much grown here.

Timothy—A very good crop and a good average yield.

Clover—A fair crop and the 1912 seeding looks fine.

Prairie Hay—Not much raised but what we have was good.

Other Grains and Grasses—A little alfalfa in some localities and it does very well.

Potatoes—A good crop and some large yields are reported.

Vegetables—Very good.

Apples—A very few home grown apples this year.

Other Fruits—All small fruits were fine.

Cattle—Scarce and high.

Horses—Very few changing hands. Good horses bring good prices.

Swine—Plenty of hogs on hand and plenty of soft corn for feed.

Sheep—Very few flocks in this county but they are of good quality.

Poultry—This industry is on the increase. Many are keeping fine flocks of blooded poultry.

Drainage—Quite a lot being done.

Other Industries—The dairy industry is being pushed and we have many fine creameries in this county.

Lands—Advancing rapidly in value.

Report of Fair—Held September 16-18, 1912. We had very unfavorable weather and our fair was not a success financially. It rained most of the time.

WRIGHT.

CHAS. ROTZLER, CLARION, OCTOBER 14, 1912.

General Condition of Crops and Season—Good.

Corn—Good.

Oats—Good.

Wheat—Good.

Rye—Very little planted.

Barley—Not much grown.

Flax—I know of none.

Buckwheat—Not much raised.

Millet—Good.

Sorghum—None.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Other Grains and Grasses—Good.

Potatoes—Good.

Vegetables—Good.

Apples—Poor.

Other Fruits—Fair.

Cattle—Good.

Horses—Good.

Swine—Good.

Sheep—Good.

Poultry—Good.

Bees—Good.

Drainage—Improving.

Other Industries—In a thriving condition.

Lands—Increasing in value every day.

Report of Fair—Held September 3-6. The fair now has bright prospects for a successful future with the right kind of management.

PART XV

Directory of Associations and Organizations Representing Agricultural Interests in Iowa

Iowa Department of Agriculture—President, C. E. Cameron, Alta; Vice-President, O. A. Olson, Forest City; Secretary, A. R. Corey, Des Moines; Treasurer, G. S. Gilbertson, Des Moines.

Iowa State Horticultural Society—President, M. J. Graham, Adel; Vice-President, F. P. Spencer, Randolph; Secretary and Librarian, Wesley Greene, Davenport; Treasurer, F. O. Harrington, Williamsburg.

Iowa Park and Forestry Association—President, Eugene Secor, Forest City; Vice-President, M. J. Wragg, Des Moines; Secretary, Wesley Greene, Des Moines; Treasurer, A. T. Erwin, Ames.

Society of Iowa Florists—President, Wm. Trillow, Des Moines; Vice-President, F. J. Olsan, Ames; Secretary, Wesley Greene, Des Moines.

Western Grain Dealers' Association—President, E. A. Fields, Sioux City; Vice-President, E. R. Ericson, Story City; Secretary and Treasurer, Geo. A. Wells, Des Moines.

Iowa Corn Growers' Association—President, F. H. Klopping, Neola; Vice-President, J. W. Coverdale, Ames; Secretary, H. L. Eichling, Ames; Treasurer, Ray Bennett, Ames.

Corn Belt Meat Producers' Association—President, A. Sykes, Des Moines; Vice-President, R. M. Gunn, Buckingham; Secretary, H. C. Wallace, Des Moines; Treasurer, Charles Goodenow, Wall Lake.

Iowa Beef Producers' Association—President, Chas. Escher, Jr., Botna; Secretary, Geo. H. Burge, Mount Vernon; Treasurer, C. H. Hechtner, Chariton; Membership Secretary, A. R. Leffler, Bentonsport.

Iowa State Highway Commission—Directors, A. L. Marston, Ames; C. F. Curtiss, Ames; Highway Engineer, Thomas H. Mac Donald, Ames; Assistant Engineers, C. B. McCullough, Ames; F. R. White, Ames; J. H. Ames, Ames; Consulting Bridge Engineer, J. E. Kirkman, Ames; Secretary, Annie Laurie Bowen, Ames; Stenographer, Merle Crabtree, Ames.

The Farmers Grain Dealers' Association of Iowa—President, B. Hathaway, Kingsley; Vice-President, J. W. Hagans, Barnum; Secretary, Roy H. McVicker, Eagle Grove; Treasurer, D. D. Paine, Eagle Grove.

Iowa Swine Breeders' Association—President, J. H. Watson, Madrid; Vice-President, B. F. Davidson, Menlo; Secretary and Treasurer, M. P. Hancher, Rolfe, Iowa.

Iowa State Dairy Association—President, W. B. Quarton, Algona; Vice-President, George Kolthoff, Britt; Secretary, J. J. Ross, Iowa Falls; Treasurer, E. T. Sadler, Waterloo.

Iowa Draft Horse Breeders' Association—President, G. W. Grigsby, Madrid; Vice-President, C. B. Dannen, Melbourne; Secretary, Howard Vaughn, Marion; Treasurer, Martin Nelson, Cambridge.

The Iowa Shorthorn Breeders' Association—President, Wm. Herkleman, Elwood; Vice-President, J. A. Benson, Sheldon; Secretary and Treasurer, E. B. Thomas, Audubon.

Iowa Bee Keepers' Association—President, Frank C. Pellett, Atlantic; Vice-President, J. W. Stine, Salem; Secretary, S. W. Snyder, Center Point; Treasurer, C. H. True, Edgewood.

Iowa State Poultry Association—President, E. L. Beck, Des Moines; Vice-Presidents, Carl Dare, Osceola; A. Haskins, Jesup; Mart Rahn, Clarinda; M. W. Baldwin, Sioux City; W. D. Fleming, Sioux City; T. H. Hall, Des Moines; Secretary, C. A. Kenworthy, Des Moines; Treasurer, W. L. Hall, Sioux City.

FARMERS' COUNTY INSTITUTES AND SHORT COURSES IN IOWA.

Adair—President, D. J. Cowden, Adair; Secretary, J. E. Turner, Adair.

Adams—President, Geo. E. Bliss, Corning; Secretary, A. B. Lewis, Corning.

Allamakee—President, Charles Childe, Waukon; Secretary, A. G. Meiners, Waukon.

Appanoose—President, E. M. Bishop, Centerville; Secretary, J. H. Willett, Centerville.

Appanoose—President, Craig Daniels, Moulton; Secretary, Jno. W. Wood, Moulton.

Appanoose—President, C. E. Winsler, Moravia; Secretary, C. E. Nivkirk, Moravia.

Appanoose—President, L. B. Monroe, Exline; Secretary, E. J. Beard, Exline.

Benton—President, A. J. Koch, Keystone; Secretary, J. H. Rozema, Keystone.

Benton—President, T. H. Weil, Blairstown; Secretary, H. J. Grunewald, Blairstown.

Benton—President, J. E. McMillan, Vinton; Secretary, Chas. L. Will, Vinton.

Black Hawk—President, R. M. Gunn, Buckingham; Secretary, E. E. Stokes, Waterloo.

Black Hawk—President, E. J. Buchan, La Porte City; Secretary, E. S. Genung, La Porte City.

Boone—President, M. J. Kenison, Madrid; Secretary, C. H. Reckseen, Madrid.

Boone—President, F. A. Holl, Boxholm; Secretary, M. J. Lundvall, Boxholm.

Bremer—President, J. W. Bennett, Janesville; Secretary, Ed. Barrick, Janesville.

Buchanan—President, J. E. Brame, Independence; Secretary, John Orr, Rowley.

Buena Vista—President, Algi Odoe, Rembrandt; Secretary, Conrad Peterson, Rembrandt.

Buena Vista—President, Geo. M. Allee, Newell; Secretary, James Jensen, Newell.

Butler—President, W. H. Mason, Shell Rock; Secretary, Leo G. Dewey, Shell Rock.

Calhoun—President, Geo. A. Ridge,. Rockwell City; Secretary, A. W. Eshbaugh, Rockwell City.

Carroll—President, A. G. Mereness, Glidden; Secretary, J. F. Snyder, Glidden.

Cass—President, J. A. Nelson, Atlantic; Secretary, M. B. Nelson, Atlantic.

Cedar—President, I. D. Pawnall, West Branch; Secretary, Irwin Erb, Centerdale.

Cerro Gordo—President, J. H. Carr, Swaledale; Secretary, R. A. Holman, Rockwell.

Cherokee—President, Oscar E. Heline, Marcus; Secretary, Lloyd W. Johns, Marcus.

Cherokee—President, Wm. Keck, Washta; Secretary, Joe Chapman, Correctionville.

Chickasaw—President, Fred Babcock, New Hampton; Secretary, John Heit, New Hampton.

Clarke—President, W. H. Dewey, Murray; Secretary, J. E. Ogden, Murray.

Clay—President, F. M. Smith, Royal; Secretary, C. L. Christensen, Royal.

Clayton—President, H. A. Axtell, Strawberry Point; Secretary, George Sauerbry, Strawberry Point.

Clinton—President, D. L. Pascal, DeWitt; Secretary, John Olson, Calamus.

Crawford—President, Jas. T. Byrnes, Denison; Secretary, W. C. Rollins, Denison.

Dallas—President, Geo. M. Fox, Dallas Center; Secretary, Don. E. Fish, Adel.

Davis—President, V. G. Warner, Bloomfield; Secretary, Will C. Horn, Bloomfield.

Davis—President, E. J. Augspurger, Pulaski; Secretary, J. W. Wray, Pulaski.

Decatur—President, A. E. Cotterill, Leon; Secretary, J. W. Long, Leon.

Delaware—President, F. H. Munson, Manchester; Secretary, J. F. Merry, Manchester.

Des Moines—President, Willis I. Mathews, Danville; Secretary, S. H. Sater, Danville.

Dickinson—President, Fred La Doux, Spirit Lake; Secretary, C. H. Arthur, Spirit Lake.

Dubuque—President, Joseph H. Dehner, Cascade; Secretary, W. A. Fairburn, Cascade.

Emmet—President. J. G. McDonald, Estherville; Secretary, John Utz, Estherville.

Fayette—President, James Scallan, Waucoma; Secretary, Errol Finch, Waucoma.

Floyd—President, W. E. Gaylord, Nora Springs; Secretary, D. B. Swartwood, Nora Springs.

Fremont—President, W. W. Ettleman, Sidney; Secretary, H. J. Ross, Farragut.

Greene—President, J. B. Patrick, Dana; Secretary, J. H. Hughes, Grand Junction.

Grundy—President, Louis Albert, Reinbeck; Secretary, Gustav Treimer, Reinbeck.

Guthrie—President, John Guy, Guthrie Center; Secretary, O. W. Simmons, Guthrie Center.

Hamilton—President, J. C. Ritchie, Stratford; Secretary, H. H. Waller, Stratford.

Hancock—President, Fred Zuehl, Britt; Secretary, Tom Peterson, Britt.

Hardin—President, J. M. Hunt, Ackley; Secretary, Rieko Snater, Ackley.

Harrison—President, R. W. Lewis, Woodbine; Secretary, Catherine Lotspiech, Woodbine.

Henry—President, C. T Forbes, Mt. Pleasant; Secretary, L. C. Willits, Mt. Pleasant.

Howard—President, B. P. Norton, Cresco; Secretary, Charles Nichols, Cresco.

Humboldt—President, M. D. Wollcott, Humboldt; Secretary, C. A. Nordstrom, Humboldt.

Ida—President, W. W. McKay, Ida Grove; Secretary, Leonard Smith, Ida Grove.

Iowa—President, J. H. Burgy, South Amana; Secretary, Jas. Nicholas, Williamsburg.

Iowa—President, Hy Gode, Marengo; Secretary, F. H. Karstin, Marengo.

Jackson—President, Geo. W. Blake, Maquoketa; Secretary, L. L. Littlefield, Bellevue.

Jasper—President, Wm. A. Johnson, Prairie City; Secretary, W. G. Cooper, Prairie City.

Jefferson—President, W. A. Hook, Packwood; Secretary, Birnie Coleson, Fairfield.

Johnson—President, E. F. Davis, Iowa City; Secretary, R. P. Adams, Solon.

Keokuk—President, Frank S. Yerger, Sigourney; Secretary, W. E. Utterback, Sigourney.

Kossuth—President, Wm. Korrect, Armstrong; Secretary, C. M. Christensen, Armstrong.

Lee—President, Jas. Carver, Farmington; Secretary, E. C. Lynn, Donnellson.

Linn—President, T. W. Moody, Walker; Secretary, T. W. Johnson, Walker.

Linn—President, W. W. Vaughn, Marion; Secretary, R. M. Fitzgerald, Marion.

Louisa—President, Wm. Rodgers, Wapello; Secretary, J. D. Diehl, Wapello.

Lucas—President, J. L. Washburn, Derby; Secretary, DeWitt White, Derby.

Lucas—President, A. E. Beals, Russell; Secretary, J. L. Hamilton, Derby.

Lyon—President, L. M. Foote, Inwood; Secretary, F. B. Hanson, Inwood.

Madison—President, W. D. Patterson, Winterset; Secretary, H. G. Tilton, Barney.

Mahaska—President, W. G. Rice, Oskaloosa; Secretary, Hassal A. Hedge, Oskaloosa.

Marion—President, D. W. Wood, Knoxville; Secretary, C. T. Israel, Knoxville.

Marshall—President, C. E. Arney, Albion; Secretary, Austin Wiley, Albion.

Mills—President, T. A. Hougas, Macedonia; Secretary, Dallas N. McGrew, Emerson.

Mitchell—President, R. J. Fish, Osage; Secretary, H. J. Dickinson, Osage.

Monona—President, R. A. Robbins, Castana; Secretary, J. E. McNamara, Castana.

Monroe—President, John Forster, Albia; Secretary, B. S. Cash, Albia.

Montgomery—President, J. A. Olander, Stanton; Secretary, E. M. Coppage, Stanton.

Muscatine—President, C. H. Barnes, West Liberty; Secretary, E. C. Neinaber, Wilton Junction.

O'Brien—President, Geo. J. Smith, Paullina; Secretary, Geo. Thompson, Paullina.

Page—President, Arthur Falk, Clarinda; Secretary, Mrs. Sarah Huftalen, Clarinda.

Palo Alto—President, I. F. Noble, Graettinger; Secretary, E. S. George Graettinger.

Palo Alto—President, Ralph King, Emmetsburg; Secretary, Geo. C. Smith, Osgood.

Plymouth—President, B. Hathaway, Kingsley; Secretary, R. B. Twogood, Kingsley.

Plymouth—President, W. J. Long, LeMars; Secretary, Jacob G. Koenig, LeMars.

Pocahontas—President, C. L. Gunderson, Rolfe; Secretary, Chas. Johnson, Laurens.

Pocahontas—President, S. W. McKinney, Fonda; Secretary, A. B. P. Wood, Fonda.

Polk—President, Chas. Bishop, Altoona; Secretary, Geo. Grinstead, Mitchellville.

Poweshiek—President, W. N. Morgan, Guernsey; Secretary, F. B. Malcolm, Deep River, R. F. D. No. 1.

Ringgold—President, J. A. Bliss, Diagonal; Secretary, Grant Stahl, Diagonal.

Sac—President, John Fuchs, Odebolt; Secretary, W. M. Sayre, Oebolt.

Scott—President, L. A. Schnehloth, Eldredge; Secretary, Adolph P. Arp, Eldridge.

Scott—President, Joseph Graham, Princeton; Secretary, Henry Schlotfeldt, McCausland.

Shelby—President, Frank D. Nelson, Harlan; Secretary, J. C. Gingery, Harlan.

Sioux—President, G. J. Shoemaker, Hawarden; Secretary, G. L. Venard, Hawarden.

Story—President, J. H. Cleverly, Maxwell; Secretary, W. J. Hartung, Maxwell.

Story—President, W. H. Handsaker, Nevada; Secretary, Ray F. Bennett, Ames.

Tama—President, Ward Wilson, Traer; Secretary, R. G. Stoakes, Traer.

Taylor—President, F. E. Wakeman, Bedford; Secretary, D. C. Mohler, Bedford.

Union—President, A. J. Leninger, Afton; Secretary, L. J. Nickle, Afton.

Van Buren—President, Geo. V. Leffler, Stockport; Secretary, A. G. Roberts, Bonaparte.

Wapello—President, David Jay, Blakesburg; Secretary, Madison Warder, Agency.

Wapello—President, W. B. Morrison, Eldon; Secretary, J. E. Varnum, Eldon.

Warren—President, J. F. Henry, Indianola; Secretary, Silas Igo, Indianola.

Warren—President, C. B. Kern, Norwalk; Secretary, W. R. Thomas, Norwalk.

Washington—President, Geo. Reed, Washington; Secretary, C. E. Deuel, Washington.

Wayne—President, J. C. Snodgrass, Allerton; Secretary, R. C. Yohe, Allerton.

Webster—President, Aaron Peterson, Lanyon; Secretary, Van Gabrielson, Harcourt.

Winnebago—President, John Carson, Forest City; Secretary, Jas. B. Anderson, Forest City.

Winneshiek—President, J. H. McMillen, Mabel, Minn., R. No. 3; Secretary, O. L. Street, Hesper.

Woodbury—President, H. E. Brown, Salix; Secretary, Charles Carr, Salix.

Woodbury—President, E. B. Carter, Sergeants Bluffs; Secretary, F. C. Colby, Sergeants Bluffs.

Worth—President, E. H. Miller, Northwood; Secretary, Lewis G. Mellem, Northwood.

Wright—President, M. L. Howell, Clarion; Secretary, H. F. Luick, Belmond.

COUNTY AND DISTRICT AGRICULTURAL SOCIETIES AND FAIR ASSOCIATIONS IN IOWA.

Adams—Adams County Agricultural Society, Corning; President, S. M. Richey, Corning; Secretary, Geo. E. Bliss, Corning.

Allamakee—Allamakee County Agricultural Society, Waukon; President, B. O. Swebakken, Waukon; Secretary, Geo. S. Hall, Waukon.

Audubon—Audubon County Agricultural Society, Audubon; President, J. H. Maharg, Audubon; Secretary, H. A. Northup, Audubon.

Benton—Benton County Agricultural Society, Vinton; President, W. S. Bassett, Vinton; Secretary, Sol White, Vinton.

Boone—Boone County Agricultural Society, Ogden; President, A. B. Morgan, Ogden; Secretary, W. C. Treloar, Ogden.

Boone—Boone Driving Park & Fair Association, Boone; President, A. M. Burnside, Boone; Secretary, John S. Crooks, Boone.

Bremer—Bremer County Fair Association, Waverly; President, E. M. Reeves, Waverly; Secretary, J. Q. Lauer, Waverly.

Buchanan—Buchanan County Fair Association, Independence; President, R. G. Swan, Independence; Secretary, J. S. Bassett, Independence.

Buena Vista—Buena Vista County Agricultural Society, Alta; President, David Burns, Alta; Secretary, W. J. Sievers, Alta.

Butler—Butler County Agricultural and Horticultural Society, Allison; President, Frank Fishel, Allison; Secretary, O. F. Missman, Allison.

Calhoun—Calhoun County Fair Association, Manson; President, J. C. Hoag, Manson; Secretary, C. G. Kaskey, Manson.

Calhoun—Rockwell City Fair Association, Rockwell City; President, Andrew Stewart, Rockwell City; Secretary, W. Q. Stewart, Rockwell City.

Carroll—Carroll County Fair and Driving Park Association, Carroll; President, A. Kessler, Carroll; Secretary, Peter Stephany, Carroll.

Cass—Cass County Fair Association, Atlantic; President, C. Prall, Atlantic; Secretary, John J. Curry, Atlantic.

Cass—Massena District Fair Association, Massena; President, S. D. Wyckoff, Massena; Secretary, D. P. Hogan, Massena.

Cedar—Cedar County Fair Association, Tipton; President, Scott Hamilton, Stanwood; Secretary, C. F. Simmermaker, Tipton.

Cerro Gordo—North Iowa Fair, Mason City; President, Chas. H. Hamstreet, Clear Lake; Secretary, Chas. H. Barber, Mason City.

Chickasaw—Chickasaw County Fair, New Hampton; President, P. H. Brannon, New Hampton; Secretary, F. D. Griffin, New Hampton.

Chickasaw—Big Four Agricultural Society, Nashua; President, W. A. Granger, Nashua; Secretary, C. L. Putney, Nashua.

Clayton—Elkader Fair and Track Association, Elkader; President, E. C. Ehrhardt, Elkader; Secretary, Max B. Bishop, Elkader.

Clayton—Clayton County Agricultural Society, National; President, John Matt, St. Olaf; Secretary, Henry Luehsen, Garnavillo.

Clayton—Strawberry Point District Fair, Strawberry Point; President, H. A. Axtell, Strawberry Point; Secretary, R. W. Schug, Strawberry Point.

Clinton—Clinton County Agricultural Society, DeWitt; President, G. M. Smith, DeWitt; Secretary, G. H. Christensen, DeWitt.

Crawford—Crawford County Agricultural Society, Arion; President, Wm. Eggers, Arion; Secretary, O. M. Criswell, Arion.

Davis—Davis Agricultural Society, Bloomfield; President, E. D. Martin, Bloomfield; Secretary, J. O. Wishard, Bloomfield.

Delaware—Delaware County Agricultural Society, Manchester; President, Thos. Moonan, Manchester; Secretary, J. G. Sabin, Manchester.

Dickinson—Dickinson County Agricultural Society, Spirit Lake; President, L. E. Francis, Spirit Lake; Secretary, A. M. Johnson, Jr., Spirit Lake.

Fayette—Fayette County Agricultural Society, West Union; President, J. S. Smith, West Union; Secretary, E. A. McIlree, West Union.

Franklin—Franklin County Agricultural Society, Hampton; President, F. Nancolas, Hampton; Secretary, C. D. Williams, Hampton.

Greene—Greene County Fair Association, Jefferson; President, E. C. Freeman, Jefferson; Secretary, S. C. Culbertson, Jefferson.

Grundy—Grundy County Agricultural Society, Grundy Center; President, Robt. Plazer, Grundy Center; Secretary, E. V. McBroom, Grundy Center.

Guthrie—Guthrie County Agricultural Society, Guthrie Center; President, B. F. Davidson, Menlo; Secretary, Wm. Edwards, Guthrie Center.

Hardin—Hardin County Agricultural Society, Eldora; President, J. H. Hadley, Eldora; Secretary, Geo. W. Haynes, Eldora.

Harrison—Harrison County Agricultural Society, Missouri Valley; President, J. E. Jones, Missouri Valley; Secretary, A. B. Hasbrook, Missouri Valley.

Henry—Henry County Agricultural Association, Mt. Pleasant; President, John W. Palm, Mt. Pleasant; Secretary, C. H. Tribby, Mt. Pleasant.

Henry—Winfield Fair Association, Winfield; President, Chas. Larken, Winfield; Secretary, Jno. A. Baxter, Winfield.

Humboldt—Humboldt County Agricultural Society, Humboldt; President, A. M. Adams, Humboldt; Secretary, O. H. DeGroote, Humboldt.

Iowa—Victor District Agricultural Society, Victor; President, Chas Raffensperger, Victor; Secretary, J. P. Bowling, Victor.

Iowa—Williamsburg Pavilion and Fair Company, Williamsburg; President, Jas. Nicholas, Williamsburg; Secretary, J. A. Ogle, Williamsburg.

Iowa—Iowa County Agricultural Society, Marengo; President, J. A. Waddell, Marengo; Secretary, F. H. Karsten, Marengo.

Jackson—Jackson County Fair Association, Maquoketa; President, A. L. Broxam, Maquoketa; Secretary, W. D. McCaffrey, Maquoketa.

Jasper—Jasper County Agricultural Society, Newton; President, C. F. Sauerman, Newton; Secretary, F. E. Meredith, Newton.

Jefferson—Jefferson County Agricultural Society, Fairfield; President, Sanford Zeigler, Fairfield; Secretary, A. E. Labagh, Fairfield.

Johnson—Johnson County Agricultural and Mechanical Society, Iowa City; President, L. P. Kessler, Iowa City; Secretary, George A. Hitchcock, Iowa City.

Jones—Anamosa Fair Association, Anamosa; President, W. D. Sheean, Anamosa; Secretary, L. W. Russell, Anamosa.

Jones—Jones County Agricultural Society, Monticello; President, E. G. Hicks, Monticello; Secretary, O. J. Bucklin, Monticello.

Keokuk—What Cheer District Fair Association, What Cheer; President, J. M. Stephenson, What Cheer; Secretary, Geo. A. Poff, What Cheer.

Kossuth—Kossuth County Agricultural Association, Algona; President, E. A. Wolcott, Algona; Secretary, T. H. Wadsworth, Algona.

Lee—West Point District Agricultural Society, West Point; President, John Shepherd, West Point; Secretary, John Walljasper, West Point.

Lee—Lee County Fair and Agricultural Society, Donnellson; President, R. Klingler, Donnellson; Secretary, Chris Haffner, Donnellson.

Linn—Wapsie Valley Fair Society, Central City; President, E. E. Henderson, Central City; Secretary, H. F. Lockwood, Central City.

Linn—Marion Inter-State Fair Society, Marion; President, J. A. Cooper, Marion; Secretary, Gene Fagen, Marion.

Louisa—Columbus Junction District Fair Association, Columbus Junction; President, Wm. Sink, Columbus Junction; Secretary, D. N. Johnson, Columbus Junction.

Lyon—Lyon County Fair and Agricultural Society, Rock Rapids; President, W. S. Cooper, Rock Rapids; Secretary, A. S. Wold, Rock Rapids.

Mahaska—New Sharon District Agricultural Society, New Sharon; President, Sidney Harper, New Sharon; Secretary, C. T. Momyer, New Sharon.

Marion—The Lake Prairie District Agricultural Society, Pella; President, A. W. DeBruyn, Pella; Secretary, Chas. Porter, Pella.

Marshall—Eden District Agricultural Society, Rhodes; President, C. J. Buck, Rhodes; Secretary, H. M. Weeks, Rhodes.

Marshall—Marshall County Fair Association, Marshalltown; President, Warren Nichols, Minerva; Secretary, W. M. Clark, Marshalltown.

Mills—Mills County Agricultural Society, Malvern; President, Sherman Jones, Malvern; Secretary, I. J. Swain, Malvern.

Mitchell—Mitchell County Agricultural Society, Osage; President, Byron Leighton, Osage; Secretary, Carl H. Spaanum, Osage.

Monona—Monona County Fair Association, Onawa; President, J. M. Hathaway, Turin; Secretary, I. A. Blotsky, Onawa.

Monroe—Monroe County Fair Association, Albia; President, Alf Timmins, Albia; Secretary, Loren Perrin, Albia.

Muscatine—Union District Agricultural Society, West Liberty; President, C. P. Gibson, West Liberty; Secretary, W. H. Shipman, West Liberty.

Muscatine—The Wilton Fair, Wilton Junction; President, C. C. Kaufman, Wilton Junction; Secretary, W. A. Cooling, Wilton Junction.

O'Brien—Sheldon Fair Association, Sheldon; President, Fred J. Nelson, Sheldon; Secretary, Geo. Gardner, Sheldon.

O'Brien—O'Brien County Agricultural Society, Sutherland; President, Chas. Youde, Sutherland; Secretary, E. J. Claussen, Sutherland.

Page—Shenandoah Fair Association, Shenandoah; President, Chas. Aldrich, Shenandoah; Secretary, A. W. Goldberg, Shenandoah.

Page—Clarinda Fair Association, Clarinda; President, E. G. Strong, Clarinda; Secretary, J. C. Beckner, Clarinda.

Pocahontas—Big Four District Fair, Fonda; President, C. C. Patty, Fonda; Secretary, E. A. Elliott, Fonda.

Pottawattamie—Pottawattamie County Fair Association, Avoca; President, D. Gross, Avoca; Secretary, Caleb Smith, Avoca.

Poweshiek—Poweshiek County Central Agricultural Society, Malcom; President, Wm. McClure, Malcom; Secretary, James Nowak, Malcom.

Poweshiek—Poweshiek County Central Agricultural Society, Grinnell; President, J. A. Baughan, Grinnell; Secretary, J. T. Cessna, Grinnell.

Sac—Sac County Fair Association, Sac City; President, Theo. Huser, Sac City; Asst. Secretary, Gus. Strohmeier, Sac City.

Shelby—Shelby County Agricultural Society, Harlan; President, Jos. F. Beh, Harlan; Secretary, M. G. Kraschel, Harlan.

Sioux—Sioux County Agricultural Society, Orange City; President, Jno. J. De Vries, Orange City; Secretary, H. Slikkerveer, Orange City.

Story—Central Iowa Fair Association, Ames; President, C. L. Siverly, Ames; Secretary, E. H. Graves, Ames.

Tama—Tama County Fair Association, Toledo; President, W. N. Townsend, Traer; Secretary, A. G. Smith, Toledo.

Taylor—Taylor County Fair Society, Bedford; President, John J. Clark, Bedford; Secretary, C. N. Nelson, Bedford.

Van Buren—Milton District Agricultural Society, Milton; President, H. C. Power, Milton; Secretary, D. A. Miller, Milton.

Wapello—Eldon Big Four District Agricultural Society, Eldon; President, D. A. Jay, Eldon; Secretary, H. R. Baker, Eldon.

Warren—Warren County Agricultural Society, Indianola; President, J. E. Houghtaling, Indianola; Secretary, Joe McCoy, Indianola.

Wayne—Sewal Fair Association, Sewal; President, Everett Shriver, Sewal; Secretary, Loren Johnston, Sewal.

Webster—Webster County Fair Association, Fort Dodge; President, J. I. Rutledge, Fort Dodge; Secretary, Wm. H. Black, Fort Dodge.

Winnebago—Forest City Park and Fair Association, Forest City; President, F. J. Brooker, Thompson; Secretary, M. M. Thompson, Forest City.

Winneshiek—Winneshiek County Agricultural Society, Decorah; President, G. F. Baker, Decorah; Secretary, L. M. Enger, Decorah.

Woodbury—Moville Stock Show, Moville; President, W. W. McElrolt, Moville; Secretary, R. J. Anderson, Moville.

Woodbury—Inter-State Live Stock Fair Association, Sioux City; President, F. L. Eaton, Sioux City; Secretary, Joe Morton, Sioux City.

Worth—Worth County Agricultural Society, Northwood; President, John M. Slosson, Northwood; Secretary, T. O. Groe, Northwood.

Wright—Wright County Agricultural Society, Clarion; President, F. P. Wilson, Clarion; Secretary, O. W. Whaley, Clarion.

INDEX

PART I.

REPORT OF THE IOWA WEATHER AND CROP SERVICE FOR 1912.

Page

- Annual normals for Iowa 23
- Climatology of the year 1912 1
  - Monthly summaries 3
- Climate and crop bulletins 1912 28
- Climate and crop review 1912 25
- Comparative data for the state, annual 23
- Conditions, August 1 39
  - December 1, final 40
  - July 1 39
  - June 1 38
  - September 1 39

- Crop Report:
  - Acreage by counties 42
  - Average yield per acre and total product by counties 45
- Dates of killing frosts 48
- Tabulated crop summary 41
- Total Precipitation Chart, 1912 24
- Weather and crop service 1

PART II.

STATISTICAL TABLES OF IOWA'S PRINCIPAL FARM CROPS.

- Crops for various years, Iowa:
  - Barley 52
  - Corn 49
  - Flax 55
  - Hay 54
  - Oats 50
  - Potatoes 56
  - Rye 53
  - Wheat 51

- Crop statistics, principal farm crops of the United States:
  - Barley 64
  - Buckwheat 68
  - Corn 57
  - Flaxseed 71
  - Hay 74
  - Oats 69
  - Potatoes 72
  - Rye 66
  - Wheat, winter 59
  - Wheat, spring 61
  - Wheat, all 62

Crop statistics, principal farm crops of the world: Page
- Barley ... 87
- Corn ... 80
- Flax ... 91
- Oats ... 85
- Rye ... 89
- Wheat ... 82

Farm animal statistics, United States:
- Cattle, other than milch cows ... 78
- Cows, milch ... 76
- Horses ... 76
- Mules ... 76
- Sheep ... 78
- Swine ... 78

PART III.

CROP AND OTHER STATISTICS FOR THE YEAR ENDING DECEMBER 31, 1912.

Crops, acreage, yield per acre and total yield:
- Alfalfa ... 101
- Apples ... 95
- Barley ... 98
- Clover seed ... 116
- Corn ... 98
- Flax seed ... 101
- Hay (tame) ... 101
- Hay (wild) ... 101
- Oats ... 98
- Pop Corn ... 116
- Potatoes ... 101
- Rye ... 101
- Sweet corn ... 116
- Timothy seed ... 116
- Wheat (spring) ... 98
- Wheat (winter) ... 98

Farms, acreage, total ... 95
- Average monthly wage paid farm help ... 95
- Average size farms ... 95
- Number in state, total ... 95
- Silos, number in state ... 95

Introductory remarks ... 93

Live stock statistics, Iowa:
- Cattle, all ages ... 113
- Cattle not kept for milk ... 113
- Dairy cows and heifers ... 113
- Eggs, number of dozen received (estimated) ... 113
- Hogs on farms July 1, 1912 ... 113
- Horses, all ages ... 113
- Mules, all ages ... 113
- Poultry on farms, July 1, 1912 ... 113
- Sheep kept on farms ... 113
  - Pounds of wool clipped ... 113
  - Shipped in for feeding ... 113
  - Sold for slaughter ... 113

Tabulated crop summary, 1912 ... 94

PART IV.

PROCEEDINGS OF THE NINTH ANNUAL MEETING OF THE CORN BELT MEAT PRODUCERS' ASSOCIATION.

Addresses: Page
    Ames, Senator, A. L. 168
    Clarke, Governor George W 176
    Davis, James C 174
    Drury, Will 184
    Henderson, Judge J. H 182
    Ingham, Hon. Harvey 179
    Sykes, A 119- 164
    Thorne, Hon. Clifford 170- 201
    Tomlinson, T. W 268
    Wallace, Hon. Henry 165
    Whitenton, W. M 191
Beef making in Iowa, John M. Evvard 132
Beresford, Rex, "Profitable Beef Production" 145
Clarke, Gov. George W., address 176
Committee Resolutions 164
Davis, James C., address 174
Downing, James E., "Market Weighing of Live Stock" 160
Drury, Will, address 184
Evvard, John M., "Beef Making in Iowa" 132
Gibson, Dr. J. I., "Prevention and Control of Hog Cholera" 150
Hammill, Fred H., "The Railroad and The Stockman" 185
Henderson, Hon. J. H., address 182
Ingham, Hon. Harvey, address 179
Market weighing of live stock, James E. Downing 160
President's annual address, A. Sykes 119
Prevention and control of hog cholera, Dr. J. I. Gibson 150
Profitable beef production, Rex Beresford 145
Sykes, A., president's annual address 119
    Address 164
The application of the moisture test in grading corn, George A. Wells 128
The railroad and the stockman, Fred H. Hammill 185
Thorne, Hon. Clifford, address 170
    Address 201
Tomlinson, T. W., address 208
Wallace, Hon. Henry, address 165
Wells, Geo. A., "The Application of the Moisture Test in Grading Corn" 128
Whitenton, W. M., address 191

PART V.

PROCEEDINGS OF THE ANNUAL MEETING OF THE STATE FARMERS' INSTITUTE.

Addresses:
    Beckman, F. W 221
    Harding, Lieutenant Governor, William L 230
Beckman, F. W., address 221
Harding, Lieutenant Governor William L., address 230
Iowa roads and their future improvements, Thos. H. MacDonald 215
MacDonald, Thos. H., "Iowa Roads and Their Future Improvements" .. 215

PART VI.

SYNOPSIS OF PROCEEDINGS OF STATE BOARD OF AGRICULTURE AND COMMITTEE MEETINGS, 1911-1912.

Page
Agreement with street car company on change of entrance........270- 273
Appropriations:
    Agricultural college exhibit 248
    Babies' health contest... 248
Auction sale of houses... 269
Awards sheriff's jury land condemned............................... 267

Bids:
    Combination curb and gutter.................................... 254
    Floor in agricultural building................................. 254
    Floor in machinery hall.. 254
    Horse barn... 265
    Building purchased of Iowa Shorthorn Breeders' Association...... 290
Bishop, E. C., report on school exhibit............................ 298

Board of Agriculture:
    Meetings 237-244-247-258-275-281- 292
    Oath of office...238- 281

Bonds:
    Of secretary fixed... 238
    Of secretary and treasurer approved............................ 247
Brown, W. C., resignation as superintendent of privileges and concessions ... 297

Committees:
    Adulteration of foods, seeds and other products................ 257
    Animal industry.. 257
    Auditing 257- 278
    Boys' camp... 244
    Dairying and dairy products.................................... 257
    Executive 257
    Legislative 257
    Noxious weeds, fungus diseases in grains, grasses, plants, etc.... 257
    Per diem and mileage...............................249-261-277- 301
    Powers and duties of board..................................... 257
    Resolutions 257
    Revision of premium list...............................252-256- 257
    Special 261- 265

Contracts:
    Band and orchestras.. 270
    Combination curb and gutter.................................... 255
    Floor in agricultural building................................. 255
    Floor in machinery hall.. 255
    Horse barn... 266
    Ice 250- 280
    Irwin Bros. Cheyenne Frontier Show............................. 262
    National aeroplane company..................................... 270
    Official catalog... 270
    Premium list printing.. 250
    Score card privilege... 270
    Superintendent of grounds...................................... 251
    Street car station... 272
Corey, A. R., elected secretary, bonds.....................238- 282
    Report of expenditures, receipts and improvements.............. 238
    Salary 238
    Report 283
Deemer, Jas. H., elected superintendent of grounds.........245- 282

Page
Des Moines Bridge and Iron Works, contract 272
Des Moines City Railway, contract 270-273
Estimated building repairs, etc 259
Estimated cost of improvements 259
Executive committee meetings 250-262-263-264-267-268-270-272-273-274-277-278-279-280
Gilbertson, G. S., elected treasurer, salary 238-282
Grounds rented, national aviators 266
Horticultural department report, Elmer M. Reeves 295
Improvements authorized by board December 15 258
Inspection of hogs 293
Johnston, R. S., report on swine department 292
Lovejoy, J. E., awarded contract on horse barn 266
Machinery department report, J. P. Mullen 294
Mullen, J. P., report on machinery department 294
Nash, C. A., salary 276
Pay rolls, departments 275
Petition to vacate streets 267
Potts Brothers, awarded contract 255
Poultry department report, J. F. Summers 293
Premiums offered 1911-1912 256
Reeves, Elmer M., report on horticultural department 295
Report on public safety and transportation, E. M. Wentworth 296
Report on school exhibits, E. C. Bishop 298
Report on expenditures, receipts and improvements, A. R. Corey 238-244
  Comparative statement of premiums paid 1910-1911 241
  Cost of advertising 1911 fair 239
  Financial statement 241
  Improvements for 1912 242
  Receipts 1911 fair compared with 1910 238
  Statement amount of insurance in force, etc 243
  Statement of expense of 1911 fair compared with 1910 240
  Statement of receipts on account of ticket sales for 1911 compared with 1910 239
Report, A. R. Corey 283-288
  Comparison of premiums 1911, 1912 288
  Comparative statement receipts of 1911 and 1912 fairs 286
  Financial condition of treasury Dec. 1, 1912 283
  Improvements needed 284
  Recapitulation ticket sales, 1912 fair compared with 1911 288
  Statement of expense of the 1912 fair compared with 1911 287
Resolution favoring federal aid in extension work 244
  On baby health contest 248
  Authorizing executive committee to award contracts for cross section of steel and brick horse barn in accord with plans approved by State Board of Agriculture 260
  That no officer or employe have any concession at fair 260
Secretary elected 238-282
  Authorized sell houses at auction 268
  Bonds approved 247-282
  Bonds fixed 238
  Reports 238-283
Settlement of case Eva Brown et al vs. State of Iowa 279
Special days 1912 fair 271
Summers, J. F., report on poultry department 293
Superintendents of departments 246-289
Superintendent of grounds 245
Swine department, report 292
Treasurer, elected, salary 238-282
  Bonds approved 247
  Bonds fixed 238
Wentworth, E. M., report on public safety and transportation depts 296

PART VII.

PROCEEDINGS OF THE STATE AGRICULTURAL CONVENTION.

Page
Address, Dr. R. A. Pearson.... 451
Babies' health contest, Iowa State Fair, Mrs. Mary T. Watts.... 449
Boys' camp, Iowa State Fair, Fred M. Hansen.... 445
Cameron, C. E., elected president, State Board of Agriculture.... 464
  President's address.... 303
Chappel, Geo. M., report of the Iowa Weather and Crop Service.... 460

Committees:
  Credentials 305- 462
  Resolutions 305- 462
Curtin, E. J., elected member of Board of Agriculture.... 465
Essay, "What I Saw and Learned at the Iowa State Fair," Forest H. Ford 458
Ford, Forest H., essay, "What I Saw and Learned at the Iowa State Fair," 458
Gilbertson, G. S., treasurer's report.... 331
Hansen, Fred M., report on Iowa State Fair Boys' Camp.... 445
Iowa State Fair and Exposition.... 318
  Attendance 319
  Comparative statistics of leading state fairs.... 337
  Condensed financial statement 1896 and 1901 to 1912....338- 339
  Expense warrants....360- 443
  Improvements made in 1912.... 325
  Itemized statement of account.... 326
  Number of beef cattle entered and exhibitors 1912, 1911.... 321
  Number of entries and exhibitors 1912-1911.... 320
  Number of horses entered and exhibitors 1912, 1911.... 321
  Number of swine entered and exhibitors 1912, 1911.... 322
  Premium warrants....340- 360
  Table of improvements from appropriation and from state fair receipts 336
Legoe, T. C., elected member of Board of Agriculture.... 465
Mullen, J. P., elected member of Board of Agriculture.... 465
Olson, O. A., elected vice-president Board of Agriculture.... 464
Pearson, Dr. R. A., address.... 451
Phillips, C. W., elected member Board of Agriculture.... 464
Secretary's report, A. R. Corey.... 305
  County and district fairs.... 310
  Attendance and admission fees.... 316
  Financial statement.... 312
  Department of Agriculture, need of information bureau.... 318
  Farmers' institutes and short courses.... 306
  Financial statement, institutes.... 307
  Short course associations.... 309
Sheldon, F. E., elected member Board of Agriculture.... 465
Treasurer's report, G. S. Gilbertson.... 331
Watts, Mrs. Mary T., report on Babies' Health Contest, Iowa State Fair 449
Weather and crop service, director's report.... 460

PART VIII.

PROCEEDINGS OF THE ANNUAL MEETING OF THE IOWA SWINE BREEDERS' ASSOCIATION, 1912.

Curtiss, C. F., "Ventilation and Care of Winter Pigs".... 474
Evvard, John M., "Feeding the Brood Sow".... 478
Expert Judge Association.... 486
Feeding the brood sow, John M. Evvard.... 478
Forage crops for swine, Prof. W. J. Kennedy.... 468

Page
Halford, R. W., elected secretary-treasurer, Expert Judge Assn....... 486
Harding, R. J., elected president Expert Judge Association............ 486
Kennedy, W. J., "Forage Crops for Swine"............................ 468
Luther, C. E., "Public Sales".. 473
Luther, T. F., "The Profitable Type of Hog for Farmer and Breeder".. 477
McKelvie, Sam, elected second vice president, Expert Judge Assn...... 486
Officers of association.. 467
President's address, J. H. Watson.................................... 467
Public sales, C. E. Luther... 473
Stange, Dr. C. H., "Vaccinating"..................................... 481
The profitable type of hog for farmer and breeder, T. F. Luther...... 477
Vaccinating, Dr. C. H. Stange.. 481
Ventilation and care of winter pigs, C. F. Curtiss................... 474
Watson, J. H., president's address................................... 467
Watson, J. H., elected vice president, Expert Judge Association....... 486

PART IX.

PROCEEDINGS OF THE THIRTY-FIFTH ANNUAL CONVENTION OF THE IOWA STATE DAIRY ASSOCIATION.

Address of welcome, James I. Kenyon................................ 487
Butter scores, Iowa State Dairy convention, 1912..................... 524
Committee on resolutions... 493
Commercial starter, T. E. Culp....................................... 506
Criticism of butter exhibit, F. L. Odell.............................. 511
Culp, T. E., "Commercial Starter".................................... 506
Election of officers..511- 512
Estel, E. S., "Iowa State Dairy Association," the organization and its
    accomplishments 513
Fowler, Geo. V., "Iowa Made Cheese"................................... 516
Iowa State Dairy Association—the organization and its accomplishments, E. S. Estel... 513
Iowa made cheese, Geo. V. Fowler...................................... 516
Kenyon, James I., address of welcome.................................. 487
Kolthoff, G., elected vice president.................................. 512
Lee, Carl E., "Workmanship as a Factor in Creamery Butter Making" 493
Membership Iowa State Dairy Association............................... 526
Modern creamery construction, Prof. M. Mortensen...................... 508
Mortensen, Prof. M., "Modern Creamery Construction"................... 508
Nelson, C. A., response to address of welcome......................... 488
Odell, F. L., criticism of butter exhibits............................ 511
Power efficiency, E. T. Sadler.. 501
Report of secretary, J. J. Ross....................................... 488
Report of treasurer, E. T. Sadler..................................... 491
Response to address of welcome, C. A. Nelson.......................... 488
Resolutions 512
Ross, J. J., elected secretary.. 512
    Secretary's report.. 488
Sadler, E. T., elected treasurer...................................... 512
    "Power Efficiency".. 501
    Treasurer's report.. 491
Workmanship as a factor in creamery butter making, Carl E. Lee.... 493

PART X.

EXTRACTS FROM STATE DAIRY COMMISSIONER'S REPORT OF 1912 TWENTY-SIXTH ANNUAL.

Page

- Boost for better quality ... 543
- Butter:
  - Average monthly price, extra creamery, New York market ... 548
  - Creamery ... 546
  - General review of market ... 547
  - Pounds of butter made and sold in Iowa as reported by creameries 549
  - Renovated ... 546
- Cheese ... 547
- City milk inspection ... 535
- Cows—number reported by creameries ... 551
- Cow testing ... 543
- Cream, number of pounds received at creameries ... 549
- Educational work ... 533
- Helpful acts of the thirty-fourth general assembly ... 532
- Ice-cream ... 541
- Increase in number of creameries ... 533
- Increased revenue from license ... 532
- Iowa as a butter state ... 533
- Iowa State Dairy Association ... 541
- Milk, number of pounds received at creameries ... 549
- New building a necessity ... 534
- New measures recommended ... 534
- Oleomargarine ... 547
- Patrons of creamery, number ... 551
- Save the calves ... 534
- Separators, number of ... 551
- Silos ... 535
- Table, milk licenses issued city milk dealers 1905-1912 ... 539
- Why tests vary ... 544

PART XI.

EXTRACTS FROM STATE VETERINARY SURGEON'S REPORT OF 1912.

- Animal health commission ... 580
- Baughman, Dr. D. E., "The Method of Using Anti-hog Cholera Serum" 575
- Canadian trip ... 559
- Dourine ... 561
- Eighth biennial report ... 557
- Tuberculosis ... 565
- Glanders ... 558
- Hog cholera ... 575
- Interstate shipments of live stock ... 579
- Introduction ... 555
- Rules and regulations as to contagious diseases among animals ... 582
- The method of using anti-hog cholera serum, Dr. D. E. Baughman ... 575
- Tests on state herds ... 575
- Various state requirements for the importation of live stock ... 586

PART XII.

PAPERS ON LIVE STOCK, AGRICULTURE AND MISCELLANEOUS TOPICS, PAPERS READ BEFORE COUNTY FARMERS' INSTITUTES, ETC.

- Alfalfa management in Iowa ... 650
- Ames, A. L., "Iowa Stallion and Jack Laws" ... 601

Page
Care of the calf from the feed lot to the butcher, H. J. Hess.......... 633
Co-operation among fruit growers.......... 610
Crownover, Wm., "Feeding Draft Colts".......... 606
Economical household conveniences, Mrs. W. W. Latta.......... 625
Escher, Jr., Hon. Chas., "What Can Iowa do to Relieve the Beef Shortage?".......... 646
Farming on a business basis, Dallas N. McGrew.......... 620
Feeding draft colts, Wm. Crownover.......... 606
Hess, H. J., "Care of the Calf from the Feed Lot to the Butcher".......... 633
Kennedy, W. J., "The Beef Cattle Situation and its Solution".......... 648
Latta, Mrs. W. W., "Economical Household Conveniences".......... 625
McGrew, Dallas N., "Farming on a Business Basis".......... 620
Report of annual meeting, Iowa Beef Producers' Association.......... 644
Silos, Wallaces' Farmer.......... 629
Soil survey is needed in Iowa, W. H. Stevenson in Farmer and Breeder 641
Sparks, S. F., "Tile Drainage—Its Effect on Crops".......... 613
Stevenson, W. H. (In Farmer and Breeder), "A Soil Survey is Needed in Iowa".......... 641
The beef cattle situation and its solution, W. J. Kennedy.......... 648
The Iowa stallion and jack law, A. L. Ames.......... 601
The practical management of a hog farm, H. T. Morgan.......... 635
Tile drainage—its effect on crops, S. F. Sparks.......... 613
True, C. H., "Winter Problems".......... 618
Vaughn, Howard, "What Horses Mean to Iowa".......... 604
What can Iowa do to relieve the beef shortage? Hon. Chas. Escher, Jr. 646
What horses mean to Iowa, Howard Vaughn.......... 604
Winter problems, C. H. True.......... 618

PART XIII.

PRESS REPORTS AND LIVE STOCK AWARDS AND RESULTS IN BOYS' JUDGING CONTEST.

PRESS REPORTS.

Breeders' Gazette.......... 737
Farmer and Breeder.......... 781
Iowa Homestead.......... 713
Twentieth Century Farmer.......... 777
Wallaces' Farmer.......... 766

AWARDS AND EXHIBITORS IN LIVE STOCK DEPARTMENTS.

Cattle department.......... 813
Horse department.......... 787
Poultry department.......... 864
Sheep department.......... 855
Swine department.......... 840

SCHOLARSHIP CONTESTS.

Boys' judging contest.......... 882

PART XIV.

REPORT OF AGRICULTURAL CONDITIONS BY COUNTY AND DISTRICT AGRICULTURAL SOCIETIES IN IOWA.

Adair.......... 885
Adams.......... 886

	Page
Allamakee	887
Audubon	887
Appanoose	888
Benton	889
Black Hawk	889
Boone	890- 891
Buchanan	892
Bremer	893
Buena Vista	893
Butler	894
Calhoun	895- 896
Cass	896- 897
Carroll	898
Cedar	899
Cerro Gordo	900
Chickasaw	900- 901
Clayton	902- 903
Crawford	904
Clinton	904
Davis	905
Decatur	906
Delaware	906
Dickinson	907- 908
Fayette	908- 909
Franklin	910
Greene	911
Grundy	912
Guthrie	913
Hancock	913
Hardin	914
Harrison	915
Henry	915- 916
Howard	917
Humboldt	918
Iowa	919- 920
Jackson	921
Jasper	922
Jefferson	922
Johnson	923
Jones	924
Keokuk	924
Kossuth	925
Lee	926- 927
Linn	928- 929
Louisa	929
Lucas	930
Lyon	931
Madison	932
Mahaska	933
Marion	934
Marshall	935- 936
Mills	937
Mitchell	938
Monona	938
Monroe	939
Montgomery	940
Muscatine	940- 941
O'Brien	942- 943
Page	944
Pocahontas	945
Pottawattamie	946
Poweshiek	947- 948

Page
Ringgold ... 948
Sac ... 949
Shelby ... 950
Sioux ... 951
Scott ... 952
Story ... 952
Tama ... 953
Taylor ... 954
Van Buren ... 954
Wapello ... 955
Warren ... 956
Wayne ... 956
Webster ... 957
Winneshiek ... 958
Winnebago ... 958
Woodbury ... 959- 960
Worth ... 961
Wright ... 962

PART XV.

DIRECTORY OF ASSOCIATIONS AND ORGANIZATIONS REPRESENTING AGRICULTURAL INTERESTS IN IOWA.

Agricultural department, state ... 963
Bee-keepers' Association, Iowa ... 964
Beef Producers' Association, Iowa ... 963
Corn Belt Meat Producers' Association ... 963
Corn Growers' Association, Iowa ... 963
County and District Agricultural Societies and Fair Associations ... 969
Dairy Association, Iowa State ... 964
Draft Horse Breeders' Association, Iowa ... 964
Florists, Society of Iowa ... 963
Grain Dealers' Association, The Farmers ... 963
Grain Dealers' Association, Western ... 963
Highway Commission, Iowa State ... 963
Horticultural Society, Iowa State ... 963
Institutes and Short Courses ... 964
Park and Forestry Association, Iowa ... 963
Poultry Association, Iowa State ... 964
Swine Breeders' Association, Iowa ... 964
Shorthorn Breeders' Association, The Iowa ... 964

New York Botanical Garden Library
3 5185 00260 8485